Blueprint for Selecting Improvement Approach

Business Case

January 5, 2004

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- An executive summary document and supplemental information document may be accessed along with this detail report on the Office of the State Controller web site, www.osc.state.nc.us.

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Introduction and Purpose

- Deloitte was engaged by the Office of the State Controller, per Ratified Senate Bills 166 and 1105 (2001 Session), to perform a study to determine the feasibility of developing and implementing a new business infrastructure, as well to assess the technology of the State human resources and retirement systems. This study consisted of two phases:

  - **Phase I – Inventory and Assessment - Completed April 4, 2003**
    Goal: To develop a high-level inventory and assessment of the business systems, subsystems and integration/ interface components that provide financial, human resource, and payroll information and support to programs in State government. This included the identification of technical and business requirements, problems and risks, and the approximation of present costs incurred for operations and maintenance.

  - **Phase II – BluePrint for Selecting Improvement Approach – October 2003**
    Goal: To determine and document viable options for implementing a business infrastructure that would include integrated operations for budgeting, accounting, payroll, human resources, revenue collection, cash management, investments, and other business functions of State government. Descriptions and risks for each alternative approach are provided, along with benefits, constraints and other relevant considerations.

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Objectives

- During Phase II, Deloitte developed a business case outlining potential alternatives with the following objectives:
  - Build upon the information collected during Phase I
  - Develop multiple courses of action for the State
  - Communicate the degree of risk assigned to alternatives
  - Evaluate viable implementation alternatives
  - Recommend the best approaches to improve the State's core administrative business processes and infrastructure

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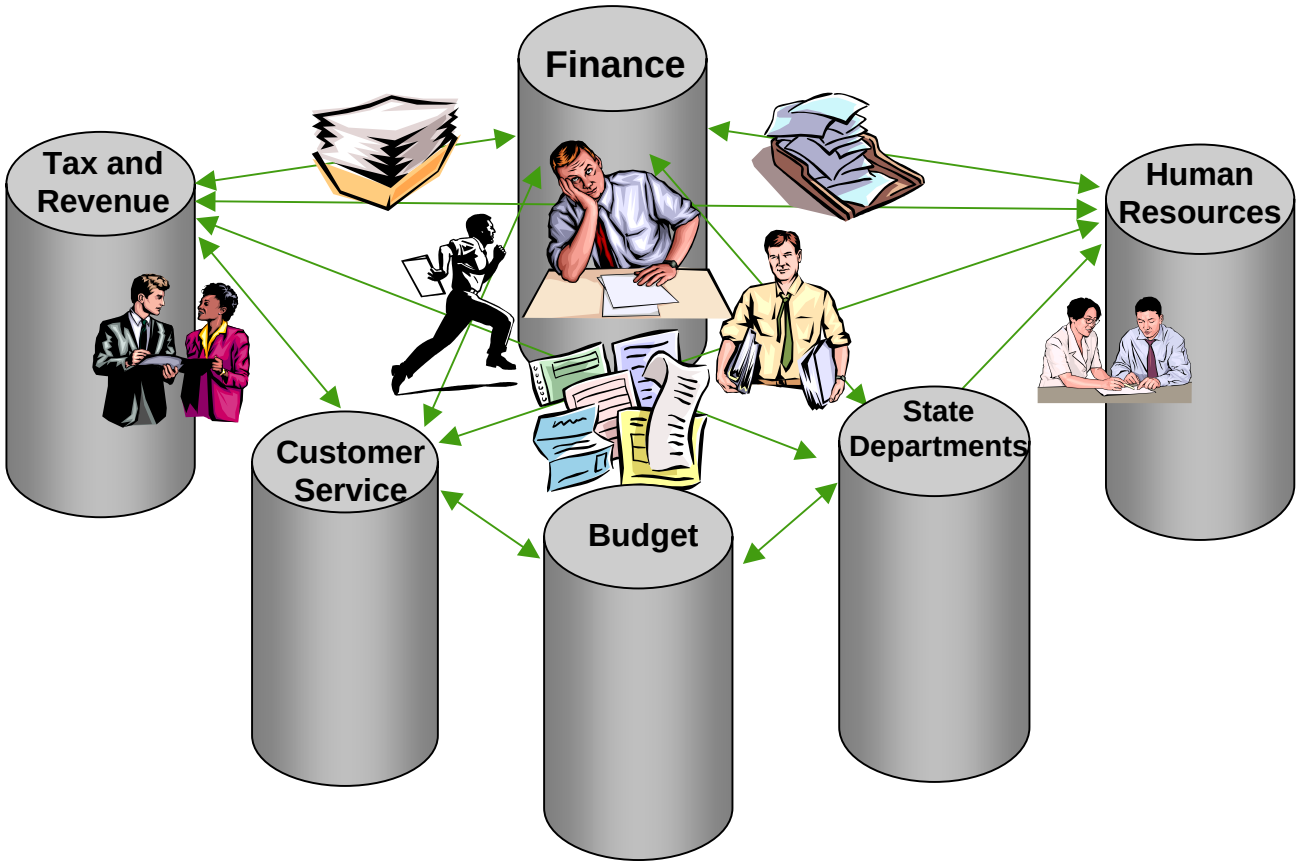
Current State

- The State of North Carolina currently has many non-integrated business process “silos” that must exchange information between internal and external organizations to meet the requirements of managers, citizens, employees, vendors and other customers.



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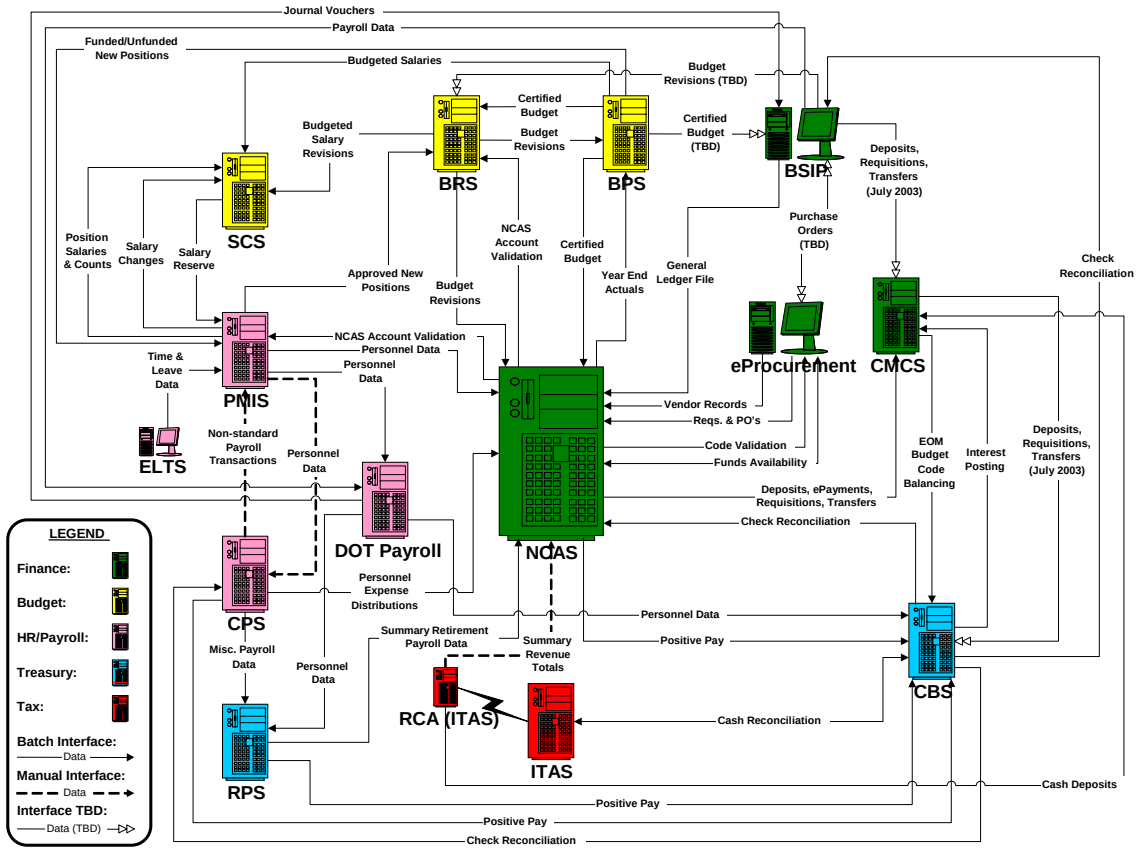
Current State

- The State's core business systems are comprised of numerous disparate applications linked through a series of batch interfaces. They require redundant manual data entry and can not easily communicate with each other.

Current System Interfaces as of April 2003



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Key Statistics - Current Systems

- Average Age
  - 20 years
- Common Technical Platform
  - Mainframe
  - IMS/VSAM/COBOL
- Integration Level
  - Batch interfaces
  - Manual data entry
- Reporting Capabilities:
  - Batch reports (Standard Reports)
  - No direct access to data/report writing
  - Custom developed reporting

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Current State – State core systems

System Name	Functional Area/ Description	System Age	Custom or Package	Primary Develop-ment Languages	# of end users	Environment (mainframe, Web, client/ server)	Hardware Platform	Core System Interfaces (1)
BPS – Budget Preparation System	Core Financial	20 years	Custom	COBOL	300	Mainframe	ITS – IBM OS/390	9 interfaces to 5 core systems
BRS – Budget Revision System	Core Financial	20 years	Custom	COBOL	300	Mainframe	ITS – IBM OS/390	9 interfaces to 5 core systems
SCS – Salary Control Reserve System	Core Financial	20 years	Custom	COBOL	300	Mainframe	ITS – IBM OS/390	9 interfaces to 5 core systems
NCAS – North Carolina Accounting System	Core Financial	8 years	Package (GEAC) with custom add-ons	COBOL	5600	Mainframe	ITS - IBM OS/390	16 interfaces to 9 core systems
CMCS – Cash Management Control System	Core Financial	20 years	Custom	COBOL II, Extrieve R6	1000	Mainframe	ITS - IBM OS/390	3 interfaces with 3 core systems
PMIS – Personnel Management Information System	HR/Payroll	25 years	Custom	COBOL	5000	Mainframe and web-based	ITS - IBM OS/390	8 interfaces with 6 core systems
ELTS – Employee Leave Tracking System	HR/Payroll	2 years	Custom	JAVA, HTML	2000	Mainframe and Web-based	J2EE Application Server and ITS- IBM OS/390	1 interface to 1 core system

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Current State (Core Systems Summary - Cont'd)

System Name	Functional Area/ Description	System Age	Custom or Package	Primary Development Languages	# of end users	Environment (mainframe, Web, client/ server)	Hardware Platform	Core System Interfaces (1)
CPS – Central Payroll System	HR/Payroll	20 years	Custom	COBOL	69 payroll units	Mainframe	ITS - IBM OS/390	6 interfaces with 4 core systems
DOT Payroll System (Legacy)	HR/Payroll	30 years	Custom	Assembler	529	Mainframe	ITS – IBM OS/390	5 interfaces with 4 core systems
ITAS - Integrated Tax Administration System	Tax	9 years	Package (Accenture's TAS) with custom add-ons	COBOL and Easytrieve	800	Mainframe	ITS - IBM OS/390	1 interface with 1 core system
BSIP – Business Systems Improvement Project (DOT Accounting System)	Core Financial / In Progress	In Implemen-tation	Package (SAP)	N/A	4000-5000	Client/server	Outsourced to Blue Star Solutions, platform used are: SUN UNIX, some NT servers, IXOS	5 interfaces to 5 core systems
RPS – Retiree Payroll System	Other / In Progress	23 years -New RFP being Released	Custom	COBOL, CICS, IMS, AND JCL	N/A	Mainframe and client/server	OS/390; Imaging subsystem on a Windows Server	2 interfaces with 2 core systems
CBS – Core Banking System	Other / In Progress	In Implemen-tation	Package (FLEXCUBE)	HTML, Java/EJB, Orcl PL/SQL, Business Obj	1500	Client/server with web-access	Windows 2000 Enterprise Server	3 interfaces to 1 core system
State Wide e-Procurement System	Core Financial / In Progress	1.5 years	Package (Ariba)	Java and COBOL	5400	Mainframe and web-based	OS/390 and UNIX	3 interfaces to 1 core system

Note:

1 An additional 166 interfaces between agency systems and core systems were identified in Phase I.

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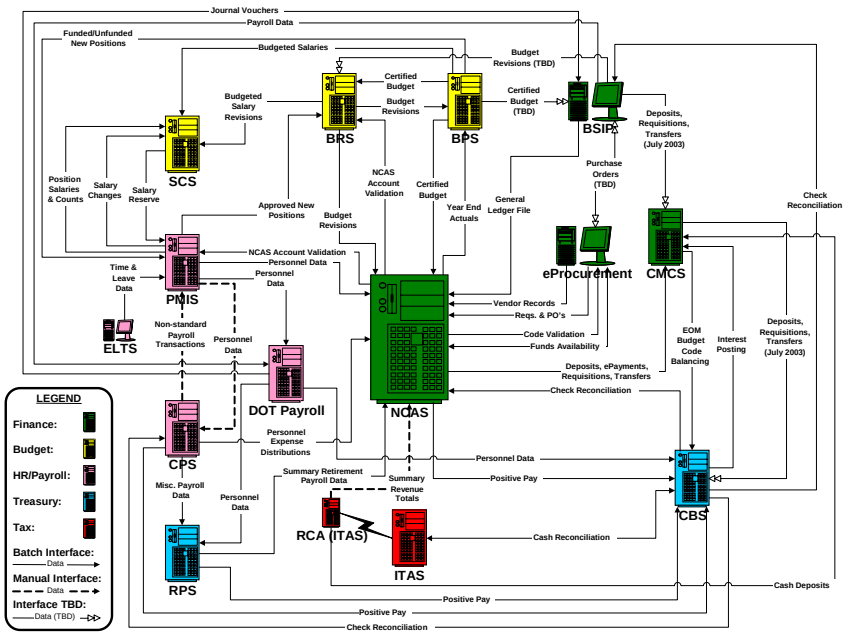
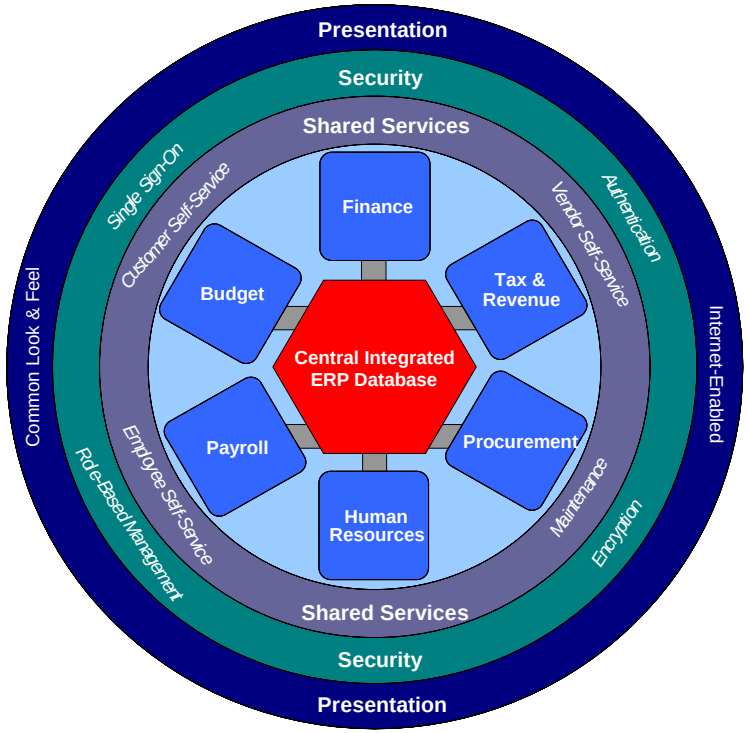
Current State

- The State of North Carolina is analyzing alternatives that could lead to improved efficiencies, data sharing, and an overall improved usage of public funds to accomplish business processes.

Current System Interfaces as of April 2003



Best Practice Integrated Enterprise Solution



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Implementation Alternatives

- To prepare the business case, Deloitte evaluated several approaches to address the State's business needs. These alternatives were:
  - ERP (Enterprise Resource Planning) Implementation
  - Outsourcing
  - Stand Alone Package
  - Custom Development
  - Enhance Current System
  - Best of Breed
- The following pages provide a brief definition and description of each of these alternatives.

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Implementation Alternatives – ERP

- An Enterprise Resource Planning (ERP) system is:
  - Is an integrated suite of software applications that support multiple business functions
  - Usually supported by a vendor for future releases of software including fixes and upgrades
  - Supported by many clients in public and private business
  - Frequently referred to as (COTS) common off the shelf software
  - Focused to deliver a group of integrated applications such as finance and budget, grant and project management, purchasing and contract management, inventory, tax and revenue, asset management, human resources, payroll or customer service.
  - A solution that provides the following features:
    - ✓ Foundation for e-government efforts
    - ✓ Work Order Management Engine
    - ✓ Integration of many business processes
    - ✓ An open architecture for integration with other systems
    - ✓ Supports workflow
    - ✓ Web-enabled

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Implementation Alternatives – Outsourcing in the Public Sector

- A variety of activities and functions are being outsourced by various government organizations
  - Technology Infrastructure
  - Information Systems Development and Maintenance
  - Information Systems Maintenance
  - Business Processes or Programs
  - Business Functions (e.g., IT, Finance, HR)
  - Entire Agencies
- The use of outsourcing varies widely across government and private sector
- There is a long history of outsourcing – and the face of outsourcing is changing rapidly
- Results from outsourcing are inconsistent, as is acceptance of this alternative service delivery
- Financing is becoming a more important aspect of outsourcing
- There are a wide variety of contractual forms and approaches in use – and much to learn
- While the public sector outsourcing environment is different from that in the private sector, the tools are readily transferable

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Outsourcing: Why Do Organizations Outsource?

- There are multiple reasons to evaluate outsourcing – manage costs, defer major capital expense, mitigate potential risk, improve performance, and allow the business to focus on core business.

Tactical	Strategic	Transformational
➢ Reduce and control operating costs ➢ Make capital funds available ➢ Provide a cash infusion ➢ Resources not available internally ➢ Function difficult to manage or out of control	➢ Improve business focus ➢ Increase flexibility and speed ➢ Access to world-class capabilities ➢ Accelerate change with proven approach ➢ Share risks ➢ Free resources for other responsibilities	➢ Bring new solutions to citizens faster ➢ Respond to long-term lack of necessary resources ➢ Respond to shorter life cycles ➢ Leverage external suppliers ➢ Reduce performance risk ➢ Acquire innovative ideas

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Case Studies in Outsourcing Issues

- The problem is not outsourcing, but how the outsourcing is managed.

Organizations

- Child Support
- Eligibility
- Medicaid
- Other HHS
- Federal Government
- Private Sector

Common Obstacles

- Political resistance (unions, agencies, legislatures)
- People issues (job security, state jobs, retirement programs)
- Unrealistic business constraints
- Concerns from previous outsourcings:
  - "Lock-in" and long-term costs
  - Contractor Performance & Stability
  - Control and accountability
  - Data Privacy

Common Mistakes

- Disregard politics and people issues
- Unclear or unrealistic requirements (immediate benefits, timing, funding, cost reductions)
- Inappropriate contract structure (process, goals, incentives, structure, performance requirements)
- Narrow scope or sub-optimal solutions
- Disregard impact of Federal requirements in HHS programs (e.g. cost allocations)

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Implementation Alternatives – Stand Alone Package

- A “Stand Alone” package is:
  - Software designed to perform a series of specific function or bundled applications such as (e.g. Budget Preparation, Bar Coding, e-Procurement)
  - Not part of an ERP product suite but can be usually be integrated to deliver a seamless business function
  - May serve as a bolt-on to ERP solutions (uses similar technology and function as a particular ERP
  - May be a “transfer solution” – a copy of an application specific system built to meet a prior clients needs
  - Frequently an application not provided by a particular ERP vendor
  - Usually supported with product updates and software support

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Implementation Alternatives – Custom Development

- Custom Development is:
  - Software developed from scratch (clean sheet) to perform a certain business function(s) (e.g.ELTS).
  - Developed either by internal staff or an external third party.
  - Typically not vendor supported at the application level.
  - Supported by an internal staff or external third party for product enhancements and fixes
  - Expensive to build and maintain.
  - Frequently much longer to develop and install than package based solutions
  - Usually an alternative when COTS based applications do not exist for a any application or requirements of the applications do not fit pre-determined business requirements.

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Implementation Alternatives – Enhance Current System

- Current System Enhancement is:
  - To lengthen existing life of any part of installed software through:
    - ✓ Through modification of the existing outdated software
    - ✓ Addition of custom developed extensions
    - ✓ Integration of a software package
  - Current system technology can be enhanced through the addition of technical features (e.g. Web Enabled) and/or through a technical refresh (e.g. VSAM to DB2).

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Implementation Alternatives – "Best of Breed"

- "Best of Breed" is a combination of alternatives. Frequently "Best of Breed" uses a series of predefined criteria to choose multiple solutions. Each major area is chosen to reflect the best alternative. The combinations possible are many. One example of a "Best of Breed" solution might be:
  - Outsource HR/Payroll functions
  - Implement inhouse an ERP Package for Financials
  - Integrate a Stand Alone Package for Budget
  - Enhance existing Tax and Revenue software
- ERP software packages may be further separated for "Best of Breed". One such example might be:
  - Implement PeopleSoft HRMS (HR/Payroll, Employee Self Service (ESS), Manager Self Service (MSS)
  - Implement Oracle Financials and Budget
  - Implement SAP Tax and Revenue

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Introduction to Business Case Approach

- To develop the business case the following activities were performed:
  - Interviewed key State personnel in each functional area
  - Collected information regarding similar state projects
  - Developed alternatives from internal and external sources
  - Determined options for each functional area using Phase I as a baseline
  - Gathered ongoing feedback from the steering committee
  - Documented options and alternatives

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Business Case Approach

- To develop the costs and benefits for the implementation alternatives by functional area, the business case team incorporated input from five primary data sources:
  - Deloitte's experience and expertise in large implementations
  - Input from vendor bids in other states for costs of software, hardware, and related maintenance and support
  - Team research for North Carolina-specific benefits, cost assumptions for state staff resources and baseline data for existing technology systems
  - Information from other state and private sector implementations for comparison
  - Input from Phase I Gap Analysis for identification of gaps, association of risks with requirements, and opportunities for improvement and benefits across state agencies
- Additional information captured from various sources included:
  - Current trends in the software and implementation markets
  - Downward pricing trends due economic pressures for software, hardware and services
  - Competitive pricing for bundled vs. stand alone applications with various vendor solutions
  - Phased capital and expense costs by alternative

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Overview of Potential Benefits

- The results of the cost benefit analysis categorized the benefits into the following five broad areas for enhancing operational effectiveness:
  - Improved decision-making
  - Increased efficiency
  - Improved process integration and controls
  - Improved service levels
  - Avoided costs of the status quo
- Each of these five areas contains a variety of potential intangible and tangible benefits, except for the last category, which only summarizes tangible benefits.

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Intangible Benefits

- Intangible benefits are defined as implementation-enabled strategic achievements that further a management direction, allow the State to better manage relationships, or allow the State to achieve qualitative improvements in processes and functions.
  - Intangible benefits broadly impact employees, elected officials, customers, and/or business partners
  - Intangible benefits are not quantified in the business case either because of the difficulty in attaching meaningful dollar values to such broad, transformational achievements or because the information is not currently tracked.
  - Examples of intangible benefits include:
    - ✓ Improved budgetary forecasting ability
    - ✓ Improved stakeholder satisfaction levels
    - ✓ Better selection of vendor partners based on enhanced reporting

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Tangible Benefits

- Tangible benefits are those potential benefits for which dollar savings can be computed. Estimated dollar or time savings may be directly attributed to the benefit based on a set of assumptions.
  - Calculation of dollar and time savings provides the basis for development of a financial case to embark upon a potential project and provides the framework to manage benefits realization after the project is complete.
  - Examples of potential tangible benefits include:
    - ✓ Reduction in cost of operating duplicate systems
    - ✓ Dollar estimates relating to process or cost efficiencies potentially achieved through savings in staff time, which do not necessarily translate to direct staff reductions

- For this business case, benefits were calculated over a seven to ten year period providing a comprehensive picture of impact of the implementation benefits beyond initial systems cutover.

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Improved Decision Making Benefits

- Today management and operational data are stored in a variety of legacy systems that exist centrally and at the various agencies.
  - It is particularly difficult for program managers to access information to make sound business decisions.
  - The proposed implementation alternatives must allow managers to easily access the management and operational data they need.

- These implementation alternatives must address the requirements for tools and data to enable managers to make more effective and timely decisions.
  - The ability to combine management and operational data from the various functional areas provides managers with the information required to make business decisions.

- An example of a key decision-making benefit is:
  - Increased budget management
    - ✓ Currently, the State's budget management tools are cumbersome and require significant intervention for budget report preparation.
    - ✓ With integrated data budget information can be shared, reported, summarized and manipulated by budget managers to speed timely decision making.

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Increased Efficiency Benefits

- The current state business processes are paper-based and labor intensive due to lack of integration of the current systems and processes.
- These function-specific and agency-specific systems and processes have evolved over time and have created organizational inefficiencies, duplication of effort and knowledge silos.
- The process redesign inherent in the various implementation alternatives presents an opportunity to examine existing processes and adopt best practices.
- These best practices can be rapidly integrated into the State's business processes to achieve efficiencies that support the State's overall goals and objectives.
- An example of increased efficiency benefit is:
  - Reduction of time in the approval process.
    - ✓ Automated workflow and approval process can be to implemented to minimize approval time and speed routing through the system.

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Improved Process Integration and Controls

- Improved process integration and control benefits are primarily derived from the consolidation of multiple systems to a single data structure that require the same data to support various business function.
- By combining multiple process systems that require the same data, the effort needed to complete multiple data reconciliations will be eliminated.
- This reduction in reconciliation time will yield direct cost savings and automate edits and system checks.
- An example of a process integration and control is:
  - A consolidated vendor master file
    - ✓ By reducing the number of disparate systems containing redundant and fragmented information, IT costs will be reduced and make way for the benefits of error reduction, process efficiencies, and tighter controls.

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Improved Service Levels

- The implementation alternatives will establish the foundation for sustainable e-government processing and improve customer and stakeholder service levels.
  - E-government is the integration of people, business processes, information, technology, state government programs, and policy to achieve new, multi-channel service delivery approaches for government.
  - E-government leverages technology to fully integrate all aspects of business such as workflow routing, personnel staffing, front line and back office transaction processing.
  - E-government allows services more accessible and responsive to the needs of citizens (e.g. 24x7, self-service) and assist in supporting the efficiency, effectiveness, reliability and affordability of its services.

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Avoided Costs of the Status Quo

- Cost avoidance benefits represent a significant cost to be incurred by the State if the alternatives are not implemented.
- Cost avoidance benefits result in savings due to the elimination of operating or planned capital costs associated with systems and processes replaced by the newly implemented systems
- The team assumed the new systems would replace several systems including:
  - Financial
  - Human resources
  - Asset management
  - Report and grants management.
- Cost avoidance savings include central administrative systems and agency administrative systems that are candidates for replacement, as well as the cost of potential upgrades or replacements.

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Overview of Estimated Costs

- Large multiple system implementation projects incur both one-time cost and ongoing costs.
  - One-time costs are incurred during the initial implementation phase of a project.
  - Ongoing costs are incurred as the first project is completed and continue over the useful life of the systems.
  - To compare costs across budget periods and individual alternatives, costs are shown in the following categories:
    - ✓ Implementation Costs
    - ✓ Annual Production Costs

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Types of Costs Defined

- Implementation Costs
  - Implementation costs represent one-time initial project investments. They include:
    - ✓ Initial hardware/software license
    - ✓ Integrator fees
    - ✓ Hardware purchase
    - ✓ Infrastructure
    - ✓ State staff during implementation
  - Implementation costs span the duration of the implementation timeline including post-production support.

- Annual Production Costs
  - Annual production costs accrue as the first function/ module within an implementation schedule becomes operational. These costs include:
    - ✓ Ongoing costs to maintain the Implementation program management office (including help desk functions)
    - ✓ Ongoing software and hardware maintenance
    - ✓ Overhead costs
    - ✓ Costs for various application software upgrades
  - Annual production costs continue throughout the useful life of a system.
  - To compare costs and benefits, in the business case, production costs have been spread across a 7-10 year benefit period.

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Estimating Cost

- The scope of this review was to analyze cost and benefits at a summary level. Estimates were developed using summary level data from existing systems and anecdotal data for replacement system costs.
  - Current System Operating Cost
    - ✓ NCAS data where available
    - ✓ Current head count applied to a standard loaded salary and benefit cost
  - Replacement System Options
    - ✓ ERP – State of Ohio Estimates
      - Major ERP vendors provided to Ohio with cost estimates
      - Implementation costs were developed by Deloitte Consulting
    - ✓ Outsourcing
      - State of Florida Contract
      - Estimates provided by outsource providers
    - ✓ Stand Alone Budget Packages – NY/NJ Port Authority Estimates
      - Estimates were provided by several Budget software package vendors
      - Implementation costs were developed by Deloitte

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Business Case — *Budget*

Budget – *Table of Contents*

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Budget – Brief Overview

- Background: Comprised of three modules, the budget systems are used to prepare the Governor's continuation budget for the Legislature, to certify the Legislature's approved budget, to process revisions to the budget, and to monitor annual salary obligations.
  - 300,000 transactions comprised the 2001-2003 budget
  - 8,000 budget revisions a year are processed
  - Eight biennial budgets are available on-line along with budget revisions for the past fifteen years
- Budget Preparation System (BPS): Implemented in 1988, the on-line BPS supports the development of the State's biennial budget.
  - Budget requests are entered into BPS in accordance with budget guidance
  - Actual expenditure information is loaded into BPS from NCAS through a batch interface
  - Budget adjustments are enabled through BPS after legislative approval
- Budget Revision System (BRS): Developed in 1985, BPS allows agencies to make revisions to the certified budget.
  - Enables agencies to request budget revisions on-line daily
  - Updates BPS, NCAS, DOT-BSIP, PMIS, and CMCS with budget revision, budget position, and budget code transfer information
- Salary Control System (SCS): SCS brings together all budget and personnel transactions that affect salaries and position counts to report the annual obligation and show annual salary reserve generated or consumed by these changes.
  - Defines the availability of budget funds for revisions
  - Determines the salary reserve.
  - Provides budget revision data to PMIS
- Planned Enhancements: Web based solution for budget allotments (Summer 2003), Web functionality to all of BPS, BRS, and SCS as time permits

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Budget – System Vision

- The budget preparation system requires an integrated process for forecasting revenues and expenditures. Budget preparation and planning should analyze the long-term financial implications of current and proposed programs and develop a realistic strategy to meet these goals.
- Key objectives for a new budget preparation system include:
  - Integrate budget to finance and HR systems
  - Provide the functionality currently needed to reduce agency-based budget preparation spreadsheet systems
  - Establish version control to support multiple budget versions as the budget is being evaluated
  - Provide expenditure “what If” modeling capability
  - Enable multiple budgets types: operational, capital, performance
  - Establish payroll assumptions and projections
  - Analyze revenues and prepare revenue projections
  - Establish spending forecasts
  - Publish budget books
  - Provide automated workflow

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Budget – Gaps Identified in Phase I

Current Budget System Gaps:

- Lack of integration to accommodate multiple requirements between budget systems and other core business systems
  - Use of multiple batch interfaces
  - Manual exchange between the legislative budget process and the Budget Preparation System
- No Capital Budgeting preparation functions - systems lack the ability to project and forecast beyond the current budget period
- Inability to develop budget variations from the same base of data
- Limited Reporting - difficulty in performing ad hoc queries
- Limited workflow
- Lack of “what-if" modeling
- No real-time budget transfer capability with financial system
- Budget doesn’t address decision support capability

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Budget – Technology Marketplace Overview

- Traditionally, budgets have long been prepared using stand-alone spreadsheets.
- The preparation process has been confined to a specific number of individuals usually within a dedicated budget department.
- Many existing budget systems are custom developed.
- Today, the trend is to implement a package-based system to accomplish an organization's budgeting needs.
- ERP systems provide required functionality to support budget preparation and are gaining popularity.
- Vendors have developed software packages that meet the needs of public sector organizations.

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Budget – System Replacement Options

- There are two options to address the State's budget requirements: system replacement or system enhancement.
- For system replacement, we have identified those packaged solutions that have the greatest chance to be successful for the State of North Carolina.
- We considered two types of proven solutions:
  - **Stand-Alone package-based systems** have been developed to support business functions common within budget preparation systems, such as those performed by the State of North Carolina. There are two types of stand alone packages: one, specifically developed for governments, and another, modified for governments from a commercial product, and consequently tends to have weaker government functionality.
    - \+ Provides budget specific functionality that meets the State's requirements
    - \- Needs to be integrated with other functional systems as it is not part of an enterprise wide solution
  - **Enterprise Resource Planning (ERP)** systems that have been developed as modular or components of solutions that meet the State and central, i.e., enterprise-wide, functionality of most large government organizations, and which have modules to support budget preparation-type functions.
    - \+ Integrated with other business processes as part of an enterprise wide suite of applications
    - \- Functionality is not as strong as a stand-alone package at this time and therefore will not meet all of the State's needs. The product was developed for the commercial market and currently is being modified for governments.

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Budget – Current Budget System Enhancement Option

- In addition, there is the option to enhance the current system.
  - Current System enhancements might include the following:
    - ✓ Adding a database for recording and processing budget allotments
    - ✓ Upgrading to Oracle 9i or future release in order to implement XML solutions and to improve database security
    - ✓ Adding hardware and software to provide 24 x 7 operation expected by the State's clients
    - ✓ NOTE: While OSBM has identified these enhancements, OSBM did not submit a formal request for funding for any of these initiatives due to the lack of money available.
      - \+ Enhancing the current system would provide additional functionality at low cost.
      - \- The current system would still be operating on dated technology. The long-term danger is that it would be unsupported since there is only one person who completely understands the system.

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Business Case – New Budget System Intangible Benefits

- Intangible benefits - Implementation-enabled strategic achievements that can not be quantified.

Improved Decision Making

- Increase Budget Management Capabilities
  - Supports performance budgets
  - Establishes payroll assumptions, salary control, and projections
  - Analyzes revenues and prepare revenue projections
  - Establishes spending forecasts
- Allows ability to prepare Capital budgets
  - Project and budget revenue and expense data beyond the budget period
  - Capture actual revenue and expenditure data on an inception-to-date basis to adjust the capital as needed
- Provides real time budget transfers

Improved Processes & Controls

- Improve position control information
  - Identifies position turnover costs by calculating payroll projections using accurate information from an integrated database, combining human resources, payroll and budget information
- Integrate processes across functional areas
  - Full integration with financial systems
  - Full integration with human resources system to provide easy access to information on authorized and filled positions to support the preparation of the salary budget

Improved Efficiencies

- Budget version control
  - Provides uniform, basic data to independent users such as agencies, OSBM, and Fiscal Research Division to analyze various scenarios of budget proposals
  - Allows agencies to prepare budgets in private
- Reduce time for approvals
  - Automated workflow and increased availability of background materials
- Automated workflow
- Ability to perform “What If” modeling
- Automation of budget exchange between the Governor’s and Legislative budget

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Business Case – Budget System Intangible Benefits Analysis

- Intangible benefits – Implementation-enabled strategic achievements cannot be quantified.

Value

- Best
- Good
- Fair
- Bad
- Worst

	ERP (Financials and Budget)	Stand-alone Package	Current System with Enhancements
Improved Decision-making			
Improved Processes and Controls			
Improved Efficiencies			
Summary			

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Business Case – New Budget System Tangible Benefits

- Tangible benefits can be quantified and calculated.

Tangible Potential Cost Reductions	Annual Cost Reductions
Reduction in the agency budget staff costs related to budget duplicate data entry	$665,000.00
▪ Application maintenance costs - Staff Redirection	
▪ Hardware and Software upgrade and licensing costs	
▪ Operations costs	
▪ Infrastructure costs	
Automation of data exchange between the Governor's and Legislative budget systems	$38,000.00
Total Potential Efficiencies	$703,000.00

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Business Case – Budget System Tangible Benefit Calculation and Assumptions

Tangible Benefit Potential Cost Reductions	
Cost of running spreadsheet systems (28 systems-assuming 1 per agency)	
Assumed number of Agency Budget Employees	84
Average salary and benefits (18% of salary) of a State Employee	$39,607.00
Percent of Time spent on manual rework(spreadsheets, updating BPS, manual changes after legislative approval)	20.00%
Total Potential Cost Reductions	$665,397.60
Total Approximate Cost Reductions	$665,000.00
FTE cost savings for automating the budget process	
Number of State Budget Office Analysts	25
Days working on budget line item revisions	10
Days as a percentage of work year	3.85%
Cost of budget process of approval between leg and gov's office	$38,083.65
Total Approximate Cost Reductions	$38,000.00

Assumptions:

- We estimated that there were 84 total agency budget employees within the 28 agencies were examined. To determine this number, we approximated that there were 8 large, 12 medium and 8 small sized agencies. We contacted DHHS, being one of the largest agencies, who stated that they had 7 budget analysts. Therefore, being conservative, we estimated that there were on average 5 budget employees in a large organization, 3 in a medium and 1 in a small agency.
- Of the estimated 84 agency budget employees, based on similar projects, we assume that 20% of their time is spent maintaining the current system, doing rework and making manual revisions to the budget system.
- Because the maintenance cost for all three current budget systems are reported as a single amount, it was not possible to determine the potential savings that will result from implementing a single integrated budget system. However it is safe to assume that moving from three systems to one will result in a smaller ongoing maintenance effort.
- For the automation of the approval process between the Governor's office and the Legislature, we assumed that the process of making detailed line item adjustments to the budget from the legislature takes 25 of the 30 FTEs in OSBM approximately 10 days.

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Business Case – Current Budget System Costs

Budget Preparation System, Budget Revision System, & Salary Control System	
Annual Operating and Maintenance Cost Approximations	
Cost Categories	**Estimated Costs**
Staffing – State Employees (Development, Maintenance, System Support, Help Desk)	$178,715
Staffing – Contractor	$0
Technical Services (ITS charges for Mainframe, Telecom, Networking, etc…)	$116,500
Licensing / ASP / Maintenance Fees	$11,000
Training	$0
TOTAL	**$306,215**

- BPS, BRS, & SCS Cost Clarifications and Assumptions:
  - Maintenance and operations costs provided by the Office of Management and Budget represent costs for the 1 year period July 01 – June 02 with the addition of $5,000 added to ITS charges to compensate for the 2nd year of the Biennial budget where the ITS costs will be $10,000 higher. The cost is being split between the two years.
  - Two of the three FTE's identified as supporting these systems are from a pool of similar resources. To approximate the State staffing costs their average compensation was used in the calculation.
  - A "$0" indicates no costs were expended in a category. "Unknown" means the data was not available.

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Business Case – Current Budget System Cost Assumptions

- On the preceding slide are estimated costs for the annual BPS, BRS, and SCS operation and maintenance costs. The three systems are maintained by the same personnel within the Office of State Budget and Management and therefore the costs are captured together. General guidelines and assumptions used in gathering the cost information include the following:
  - Costs for the core agency supporting the system, including:
    - ✓ Technical system development and maintenance FTE costs
    - ✓ System support and operations FTE costs (e.g., running reports, bursting)
    - ✓ Help Desk FTE support
    - ✓ Maintenance, Licensing, and Application Service Provider (ASP) Fees
    - ✓ ITS charges for technical services (e.g., mainframe, networking)
    - ✓ Training costs to support the system
  - Costs **NOT** captured unless otherwise noted include:
    - ✓ Infrastructure and capital costs like PCs, printers, plotters and other equipment.
    - ✓ FTE costs associated with using the system (e.g. data entry, system inquiry, manual processing costs in data preparation, manual systems being maintained to supplement the core system. etc.)
    - ✓ Any costs from agencies outside the core agency that use the system unless it is included in the ITS charges billed to the core agency
    - ✓ Data processing supplies or miscellaneous expenses unless included in the ITS charges
    - ✓ Any agency and Legislative FTE costs associated with using the system
- If there are unique costs associated with the Operations and Support of a system the cost will be identified separately.

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Business Case – Budget Replacement Cost and Benefit Summary

Cost Type	Stand-alone Package	ERP Budget Module	Current System with Enhancements
Estimated Software Package	$489,000	$375,000	$0
Implementation Costs (12 month timetable)	$2,600,000.00	$2,600,000.00	$0
Maintenance Costs (20% annually)	$97,800.00	$75,000.00	$0
Annual Operating Cost	$295,000.00	$295,000.00	$306,215.00
Total Estimated Cost	**$3,481,800.00**	**$3,345,000.00**	**$306,215.00**
Potential Cost Reductions from Tangible Benefits			
Planned Current Enhancements (Budget office did not submit a request since they felt there was no money available)	$0	$0	$0
Annual Potential Cost Reductions	$703,000.00	$703,000.00	$0
Total Potential Cost Efficiencies	**$703,000.00**	**$703,000.00**	**$0**

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Business Case – Budget System Replacement Cost Assumptions

The following assumptions were developed:

- With the exception of the annual software maintenance fee (referred to below), the operating cost will not dramatically deviate from the current annual maintenance costs. However, the role of the current support staff will change from program development to system configuration and maintenance. ITS costs and fees will remain the same.
- Based on existing implementation experience, post implementation maintenance costs tend to increase due to the increased functionality. Furthermore, ITS costs/ fees may rise, along with software maintenance agreement costs.
- Most COTS based application software will incur an additional 18-22% expense for annual software maintenance.
- Based on our findings, at least one agency-based spreadsheet budget system in addition to current budget system exists for each agency (28 agencies).
- To estimate agency budget employees, the DHHS was contacted for staffing (7 FTE's) and approximate totals. It was determined there were 84 total agency budget employees across the 28 agencies. To determine this number, we approximated that there were 8 large, 12 medium and 8 small sized agencies. It was estimated 5 budget employees were assigned in a large organization, 3 in a medium and 1 in a small agency.
- Of the 84 agency budget employees, it was assumed 20% of their time was allocated to maintaining the current system, performing rework and revisions to the budget system.
- For the automation of the approval process between the Governor's office and the Legislature, it was assumed that the process of making detailed line item adjustments to the budget from the legislature takes 25 of the 30 FTEs in OSBM approximately 10 days.
- For comparison purposes, It was assumed the total cost for an ERP budget solution and a stand alone package would incur similar costs. The budget module of an ERP solution may cost slightly more than a "stand alone" package but may be bundled with various integration hooks that eliminate the development of complex interfaces. Overall "stand alone" package implementation costs tend to be slightly higher since the package must be integrated with other systems and require multiple interfaces.

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Business Case – Budget System Replacement Cost Assumptions (Cont'd)

- ERP Specific Assumptions:
  - Based on our prior experience in other states, an ERP budget package should range between $250,000-$500,000. Exact pricing for software license is subject to many factors such as state-wide purchasing contracts and number licensed users.
- Stand-Alone Package Specific Assumptions:
  - Based on our experience with other states and public organizations, an average of five major package vendors costs were averaged to determine the software costs for a stand-alone package solution.

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Business Case – Risks of the Status Quo

- The following key points are associated with the current budget system:
  - The technology is antiquated (20+ years).
  - Existing application software is custom and relies on an outdated hierarchical database infrastructure which is subject to future elimination of vendor support.
  - Existing resource expertise is limited to a single internal resource for maintenance with an increased difficulty for alternate resource support due to out of date technology.
- There is significant risk if the budget system is not replaced. The budget process could fail. The system is old, has been modified, and most likely lacks current technical documentation. It has become increasingly difficult to modify, which will result in the system's inability to support legislative changes. These factors pose potential risk for major delays and problems during the approval of the biennial budget.
- Current Risks:
  - System could fail at any time.
  - Existing system may not be able to react to Legislative changes
  - Significant potential for significant long-term maintenance costs
  - Potential integration issues with future replacement systems
  - May not be able to respond to business issues/ events in a timely manner.

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Business Case – Budget System Replacement Recommendation

- If the State plans to implement a new budget system within the next 1 – 2 years, implementing a stand alone package solution would most closely fit the State's existing requirements.
  - The government budget functionality contained in an ERP solution lacks functionality to meet the State's budget requirements.
  - While SAP, PeopleSoft and Oracle are providing budget preparation, their solutions require enhancement to meet many core budget preparation business functions. SAP lacks a comprehensive budget preparation module. The SAP offering is a combination of Funds Management, Special Ledger and Business Warehouse.
  - Assuming the State plans to implement a new budget preparation system before financials, another difficulty with an ERP solution is that there would still be a need to implement and configure parts of the ERP, which would require more effort than a stand-alone package solution.
- Due to the requirement for an integrated budget and financial system, it is potentially appropriate to enhance the current budget system and revisit ERP budget module replacement with the financial system.

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Business Case – Budget System Replacement Summary

- The chart depicted below summarizes the results of previous slides providing comparison across the major areas of analysis.

Value

- Best
- Good
- Fair
- Bad
- Worst

	ERP Budget Module	Stand-alone Package	Current System with Enhancements
Intangible Benefits			
Tangible Benefits			
Cost			
Risk			
Summary			

After review of the various alternatives, the best course of action to meet current budget demands at a reasonable cost is a **"stand-alone"** package implementation. Should the State elect an extended implementation option, the solution should be reassessed in three years.

* Represents level of effort to bring current system functionality in line with ERP and stand-alone package.

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Business Case — *Financials*

Financials – Table of Contents

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Financials – Brief Overview

- **Background.** The Office of the State Controller (OSC) is responsible for two systems providing control over the State's fiscal policies and procedures. Functions include A/P, General Ledger, Purchasing, Inventory, Fixed Assets, Budgetary Control and the capturing of transactions affecting cash balances.
- **North Carolina Accounting System (NCAS).** Supports the State's accounting, budgetary control and financial management reporting functions. The GEAC E Series System was purchased in 1988, implemented in a phased approach through 1995 and currently supports 5600 users. The NCAS system supports:
  - Cash and Accrual Basis Fund Accounting
  - Financial data for the budget system
  - Summary and detailed budgetary and GAAP reporting
  - Validation of the Uniform Chart of Accounts
  - Material management functionality for Accounts Payable and Inventory Control
- **Potential enhancements to NCAS include:**
  - Web access to external users for data inquiry
  - E-mail messaging to some workflow areas
  - Addition of GEAC options (e.g. - Extensity 6 - streamlines procurement, travel planning, expense reporting)

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Financials – Brief Overview (Cont'd)

- **Cash Management Control System (CMCS).** The CMCS system records the daily transactions affecting the cash balances of the State. This custom developed system is over 20 years ago and supports over 1000 users. Functions of the CMCS system include:
  - Deposit of state funds
  - Transfer funds to other budget codes
  - Requisition funds to pay for goods and service
  - Reporting the State's cash position
  - Maintains monetary control over appropriations, allotments and disbursements
  - Compares balances with agency accounting records
  - Inquiries on transaction statuses and balances

- **Planned Enhancements to CMCS include:**
  - No enhancements are currently planned

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Financials – System Vision

- Provide consistent, timely, and accurate financial management information across agency boundaries to support both central and agency reporting requirements, and financial management of the State government.
- Key objectives for a financials system include:
  - Support cash, modified accrual, and accrual basis accounting
  - Provide functionality currently supported by agency-based financial systems for grant accounting, A/R, collection activities, project tracking and other various financial functions
  - Provide integrated fixed asset accounting
  - Seamless integration with the HR/Payroll, budgeting, and procurement solutions with no duplicate data entry or file exchanges
  - Online and real-time data validation, funds checking, and account posting
  - Automated workflow to route and approval of transactions
  - Web-based inquiry access for vendors and other parties
  - Provide cash forecasting tools
  - Quick response to information requests and access to online reports

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Financials – Gaps Identified in Phase I

Current Financial Systems Gaps:

- Lack of integration with other core business systems such as HR/Payroll, Budget, and e-Procurement
  - Use of numerous batch interfaces
  - Limited coordination of data updates/changes causing data duplication and manual entry and corrections
- Lack of a specific grant management module
  - No funds checking by grant
  - No state level grants reporting
- Limited use of project accounting module
- Limited cost allocation functionality
- Limited accounts receivable (A/R) functionality and usage
- Limited fixed assets functionality required for GAAP reporting
- Limited automated workflow
- Lack of agency level cash availability confirmation before checks are written
- Manual approval or rejection of a cash transfer within the Cash Management Control System

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Financials - Technology Marketplace Overview

- ERP Financial packages have been successfully implemented in both the public and private sectors.
- Traditionally, public sector entities have implemented custom/transfer financial system packages that provide a majority of the required functionality and are modified to meet a state's particular needs.
- In recent years, ERP package vendors have developed software packages to meet public sector specific financial systems requirements. These solutions have gained in popularity in the public sector.
- ERP packages that provide seamless integration are extremely popular due to ease of use and ability to maintain.
- Although the functionality contained in ERP packages has been increasing, market growth statistics (includes both public and private sector) measured by license revenue has been declining due to two factors:
  - The economic downturn
  - A shift in buyer behavior – Buyers are seeking smaller less expensive components of software suites to quickly drive positive bottom-line results.

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Financials – System Replacement Options

- **Enterprise Resource Planning (ERP)** financial packages have the greatest chance of being successful for the State of North Carolina.
- ERP systems have been developed in modules to permit them to be implemented as stand-alone applications or as part of a complete enterprise wide core business solution that includes financials, budget, HR, and payroll although the level of functionality provided varies by module.

  - *Pros:*
    - Provide a full suite of financials functionality to satisfy both core business requirements and agency grant and project accounting requirements
    - Easily integrates with other ERP modules as part of an enterprise wide suite of applications
  - *Cons:*
    - ERP financial systems address a broad spectrum of requirements. As a result they are complex and tend to be expensive to implement.
    - Implementation of an ERP financial system will create a significant change and leadership challenge.

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Financials – Current System Enhancement Option

- The following enhancements to the existing financial system are in consideration; however, the specific scope of each effort is not clearly defined:
  - Provide web access for external user data inquiry
  - Add e-mail messaging to some workflow areas
  - Analysis and possible addition of GEAC options
    - ✓ Extensity 6 can streamline procurement, travel planning, expense reporting, payroll and project time capture processes
    - ✓ GEAC is merging with Comshare to provide software to assist businesses with financial planning, budgeting, forecasting and reporting.
  - Note: OSC did not submit a formal funding request for any of these initiatives and the full capabilities of the GEAC options are unknown.
- While enhancements to the current financial system may be considered cost effective in the short run, they do no provide a feasible solution in the long for the State. Reasons include:
  - Current systems are built on dated technology (e.g. VSAM, COBOL)
  - Current NCAS (GEAC) system would require a technology upgrade
  - Availability of resources to support older technologies will become more limited over time
  - New GEAC releases must be retrofitted with prior OSC customizations

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Financials Business Case – Intangible Benefits of a New System

- Intangible benefits - Implementation-enabled strategic achievements that can not be quantified.

Improved Customer Service

- Vendor/customer self service
- More timely response to vendor correspondence
- Increased ability for vendors to access their accounts 24/7
- Increased consistency of messages conveyed externally

Improved Resource Management

- Increased employee retention
- Increased ability to find technical personnel with the appropriate background
- Better sharing of resources

Improved Processes & Controls

- Increased automation of non-complex tasks
- Default adoption of industry best practices
- Use of messaging and automated workflow
- Improved tracking and reporting
- Integrated processes across functional areas and between organizations

Improved Decision Making

- Availability of better data for decision management
- Improved data accuracy and integrity due to “single source” of data reference (e.g., consolidated vendor files, fewer agency systems)
- Better management of staff resources
- Enhanced ability to access data and produce outputs in appropriate formats

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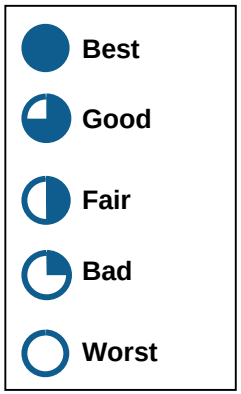
Financials Business Case – Intangible Benefits (Cont'd)

- Intangible benefits - Implementation-enabled strategic achievements cannot be quantified.

Value



	ERP Financials	Current System with Enhancements
Improved Customer Service		
Improved Processes and Controls		
Improved Resource Management		
Improved Decision-making		
Summary		

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Financials Business Case – Tangible Benefits of a New System

Tangible benefits are benefits that are calculable.

- The following table contains the high level estimated annual benefits that may be achieved with an ERP package(s) implementation

Potential Tangible Benefits	Annual Potential Cost Reductions
Reduction in the cost to support multiple agency systems (e.g., A/R and Collections, Project Tracking and Grant Accounting)	
Application maintenance costs - Agency staff redirection	$3,759,468
Hardware and software upgrade and licensing	$500,000
Infrastructure Costs	$300,000
Cost avoidance of the current system costs	$6,241,421
Total Annual Potential Cost Reductions	$10,800,889

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Financials Business Case – Current System Costs

Annual Operating and Maintenance Costs Categories	North Carolina Accouting System (NCAS)	Cash Management Control System (CMCS)
Staffing - State Employees (Development, Maintenance, System Support, Help Desk)	$2,659,497	$206,824
Staffing - Contractor	$504,955	$23,438
Telcom, Networking, etc.)	$2,409,397	$24,295
Licensing/Maintenance Fees	$384,640	$0
Training	$12,811	$0
Miscellaneous Expenses	$15,475	$89
Sub Totals	**$5,986,775**	**$254,646**
Grand Total		**$6,241,421**

- Cost Clarifications and Assumptions:
  - Maintenance and operations costs provided by the Office of the State Controller represent annual costs.
  - The training and miscellaneous expenses were captured from the Information Technology Expenditures Report for the period ending June 30, 2002.
  - CMCS Contractor costs are a partial allocation of an FTE. This contractor also supports the Central Payroll System.

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Financials Business Case – Current System Cost Assumptions

- On the preceding slide are annual estimated costs for the NCAS and CMCS systems. General guidelines and assumptions used in gathering the cost information include:
- Costs are for the core agency supporting the system and include the following:
  - Technical system development and maintenance FTE costs
  - System support and operations FTE costs (e.g., running reports, bursting)
  - Help Desk FTE support
  - Maintenance, Licensing, and Application Service Provider (ASP) Fees
  - ITS charges for technical services (e.g., mainframe, networking)
  - Training costs to support the system
- Costs **NOT** captured unless otherwise noted include:
  - Infrastructure and capital costs like PCs, printers, plotters and other equipment.
  - FTE costs associated with using the system (e.g. data entry, system inquiry, manual processing costs in data preparation, manual systems being maintained to supplement the core system. etc.)
  - Any costs from agencies outside the core agency that use the system unless it is included in the ITS charges billed to the core agency
  - Data processing supplies or miscellaneous expenses unless included in the ITS charges
  - Any agency and Legislative FTE costs associated with using the system

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Financials Business Case – Replacement Cost and Benefit Summary

Cost Type	ERP Financials Package (s) (Years 1 and 2)	Current System & Enhancements (2 Years)
Non Recurring Cost		
Hardware Acquisition Costs	$5,193,311	$0
Software Acquisition Costs	$16,478,505	$0
Integrator Staffing	$37,687,973	$0
State Implementation Staff	$3,744,000	
Total Non Recurring Cost	$63,103,789	$0
Recurring Cost		
Annual Hardware & Software Maintenance	$5,240,270	$0
Implementation Overhead	$1,921,989	$0
Current Operations – Help Desk, Tech/Network	$11,600,000	$12,482,842
Total Recurring Cost	$18,762,259	$12,482,842
Total Estimated Cost (2 year cost)	**$81,866,048**	**$12,482,842**
Potential Cost Reductions (Per 2 years)		
Planned Current Enhancements (No requests submitted by OSC)	$0	$0
Cost Reductions from Tangible Benefits	$21,601,778	$0
Total Potential Cost Reductions (2 years)	**$21,601,778**	**$0**

Notes:

1. Estimated cost reductions can only be achieved after the replacement system is implemented and the redundant systems are eliminated
2. Enhancements made to the existing NCAS/CMCS systems could generate additional cost reductions. Savings are unknown due to enhancements not planned but considered.

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Financials Business Case – Replacement Cost Assumptions

- Several assumptions were made to estimate the high level replacement costs of a new ERP Financials system:
  - Costs are approximated using planning data gathered in 2002 for the implementation of an SAP, Oracle, or PeopleSoft financials implementation for the State of Ohio
  - The annual maintenance costs are a blend of the maintenance costs calculated during an 8 year post implementation time frame
  - Any enhancements to improve the current financial systems will be performed using existing state staff. There will be no incremental costs.

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Financials Business Case – Replacement Benefit Assumptions

- Based on prior experience and the information gathered from 28 agencies in Phase I, the following assumptions were used to calculate agency based benefits:
  - Of the 112 systems providing agency specific financials functions, approximately 53 could be replaced by an ERP Package.
  - Of the 80+ agency interfaces to core financial systems, approximately 38 could be removed.
  - There are approximately 1571 (864 Central and 707 in divisions) employees classified as fiscal personnel (accounting managers, accounting clerks, accounting technician, accounting specialist, business officer 1-4, etc.) and 2159 IT personnel (834 central and 1325 in divisions).
  - Our experience with other similar projects indicates that 2% of the central staff and 3% of the agency staff provide support, both functional and technical to the agency systems duplicating core financials.
  - Estimated average salary of fiscal and IT staff is $48,000 including benefits.
  - Systems not reported in the Phase I survey that may support A/R, collection activities, project level financial tracking and grant accounting were not included in the approximation of costs.

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Financials Business Case – Risks of the Status Quo

- NCAS requires significant effort to stay current. There is currently a customized version of GEAC software in use. These customizations require additional time to maintain.
- The current NCAS technical platform is becoming dated - NCAS is a CICS/VSAM system written in COBOL. Securing personnel to support dated technology is a continuous challenge.
- Lack of ongoing integration between the core business systems result in continued inefficient operations.
- As GEAC is currently migrating its product suite to more current web based technologies, eventually the current NCAS software release may not be supported by GEAC.
- The State may be forced to move to a web based release of the software to keep current. This move will require a major technical hardware and software upgrade and could actually result in a re-implementation of the system.

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Financials Business Case – Risks of the Status Quo (Cont'd)

- CMCS Risks
  - Cash management processes continue to lack integration
    - ✓ Inability to automate the cash availability check
    - ✓ Use of budget code vs. accounting code
  - The current CMCS technical platform is outdated – CMCS uses IMS DL/I and is written in COBOL. Finding people to support outdated technology is a continuous challenge.

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Financials Business Case – System Replacement Summary

- The chart depicted below summarizes the results of previous slides providing comparison across the major areas of analysis.

Value

- Best
- Good
- Fair
- Bad
- Worst

	ERP Package	Current System with Enhancements
Intangible Benefits		
Tangible Benefits		
Cost		
Risk		
Summary		

After comparing the implementation alternatives, the ideal course of action to exceed the State's present and future financial demands at a reasonable cost is the **ERP financials package(s) implementation.** Should the State elect an extended Implementation option, the solution should be reassessed in three years.

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Business Case — *Human Resources and Payroll*

HR/Payroll – Table of Contents

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HR/Payroll – Brief Overview

- **Background:** The State of North Carolina operates multiple payroll, time keeping, and human resources information systems in support of the State's Human Resource operations. Although, these systems have been developed under similar technical architectures, they lack true integration. These systems are supported by code programming languages (Assembler and COBOL). At the present time, the State operates thirteen payroll systems interfaced into a single statewide Personnel Management System (PMIS). Many agencies have developed stand-alone software solutions to provide HR business functions not readily available in PMIS. This review will focus on Central Payroll and the DOT payroll systems and their interfaces to the PMIS.
- **Central Payroll System (CPS):** CPS performs the gross and net payroll calculation for all state agency employees not covered by one of the other twelve payroll systems.
  - CPS is the largest of the Payroll systems, supplying sixty-seven agencies with the ability to manage payroll activities for 79,000 employees.
  - CPS processes approximately 100,000 payroll transactions each month and generated 97,000 W-2's totaling over $3 billion for calendar year 2002.
  - CPS is comprised of three cycles: Monthly, Mid-month and Cancellation and Rewrites
  - CPS interfaces with NCAS for the posting of payroll expenditure ledger distributions, as well as the reconciliation of the various payroll accounts.
- **Planned Enhancements:** Reports Redesign (conversion from paper to on-line viewing) and Reports Consolidation (analysis of current reports and report requests to reduce large number of reports)

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HR/Payroll – Brief Overview (Cont'd)

- **DOT Payroll System:** DOT Payroll performs the gross and net payroll calculation for all employees of the Department of Transportation.
  - DOT Payroll updates the DOT accounting system with personnel expense information and operates on a biweekly payroll frequency.
  - The system performs gross and net pay calculation for 15,000 employees.
- **Planned Enhancements:** DOT has not identified any current system enhancements plans. DOT is in the process of implementing SAP as its core infrastructure platform. Once this is implemented, an evaluation will be made on whether to implement the SAP HR suite.
- **Personnel Management System (PMIS):** PMIS is the primary Human Resource System for State employees. PMIS is a centralized data repository for State employee personnel records.
  - Supports 3000 users with representation in every state agency's personnel office.
  - Accommodates over 1 million on-line transactions/queries per month.
  - Stores position and employee history since 1980.
  - Has operated with minimal exception for over twenty years
  - Generates over 300 downloads per month to satisfy agency reporting needs.
- **Planned Enhancements:** Employee Overpayment System, On-line Applicant Tracking, Upgrade from IMS to DB2, PMIS-ITS Bill Automation, Web-enabled PMIS, Agency/ University Rollout of electronic forms

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HR/Payroll – System Vision

- To obtain an integrated solution with a single point of entry for both HR and Payroll. This solution should eliminate or reduce the number of agency systems required to process HR and Payroll today.
- Key objectives for a new system would include the following:
  - An enterprise-wide Human Resources/ Payroll system that provides a foundation for management flexibility, rewards employees for high performance and allows the State to compete in the marketplace
  - The use of information technology that takes advantage of economies of scale and reduces the cost of doing business.
  - An HR/Payroll system with the functionality needed to perform the State's core HR mission.

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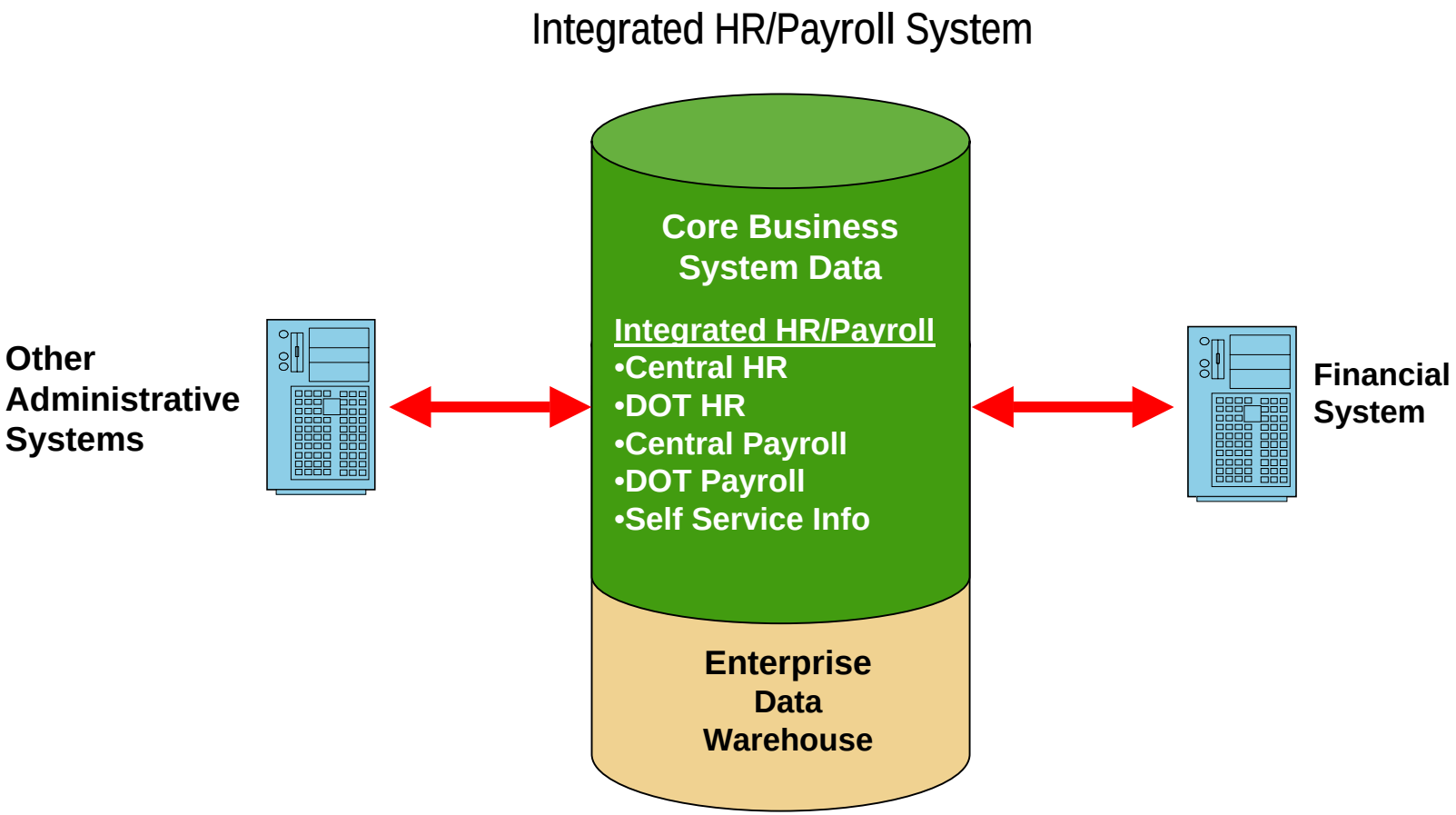
HR/Payroll – System Vision



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HR/Payroll – Gaps Identified in Phase I

Current HR/Payroll System Gaps:

- In some cases, the current systems do not provide complete HR/Payroll business functionality, while in others, the technology prevents full application of these modules. Items affected include: Career Development, Performance Management, Applicant Tracking, Employee Grievance and Complaint Tracking, Training, Occupational Health and Safety, Budget Cost Planning, and Funds Based Position Management.
- Agencies have developed stand-alone shadow applications to assist with the HR/Payroll business functions.
- The State does not provide full employee self-service portals. Employees are provided with only a limited number of self service options.
- The current system lacks the capability to develop succession plans and competency requirements.
- A Disaster Recovery test should be conducted on the DOT Payroll System.
- The lack of integration between PMIS and Payroll creates redundant data entry.
- Current system lacks fully automated workflow.

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HR/Payroll – Marketplace Overview

- Over the past decade, integrated Human Resources and Payroll software packages have been the solution for many organizations.
- Recently outsourcing has become a popular choice for HR/Payroll processing for the following reasons:
  - Provides the organization with current technology without a large initial investment
  - Expands functionality due to use of functionally rich ERP packages
  - Offers up-to-date system maintenance and support because the service provider assumes the responsibility for software maintenance and upgrade support.
  - Provides improved customer service throughout the organization
  - Allows HR/Payroll staff to concentrate on strategic value-added services
  - Provides a HR/Payroll solution that can meet future needs

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HR/Payroll – System Replacement Options

- Based on the information collected there are two options: **system replacement** or **system enhancement**.
- Options for system replacement are:
  - **Enterprise Resource Planning (ERP)** The HR/Payroll modules would be implemented on a statewide basis to support both central and agency HR/Payroll functions. This option would replace the current PMIS, Central Payroll, DOT payroll, and the many time keeping systems with a single integrated HR/Payroll system. This type of system would leverage best practices and provide updated HR and Payroll functionality.
    - \+ Integrated with other business processes as part of an enterprise wide suite of applications
    - \- Requires a large initial investment in hardware, software, and services to implement the system and will require an investment in staff to provide maintenance and operational support.
  - **Outsourcing** HR/Payroll business systems and processes. Outsourcing provides an opportunity to replace the current systems with a potential for significant cost savings.
    - \+ Minimal initial investment is required to replace the current systems
    - \+ The State of Florida experienced a 60% reduction of the HR/Payroll staff. The State of North Carolina should expect a reduction in their HR/Payroll staff as well.
    - \+ All software maintenance and upgrades are the responsibility of the outsource service provider.
    - \- Staff needed to manage and monitor the outsourcing contract
    - \- Significant organizational and cultural changes due to outsourcing.
    - \- Difficulty moving outsourced systems back in-house at the end of the contract

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HR/Payroll – Current System Enhancement Option

- Options to be evaluated for System Enhancement are
  - Add employee self-service to allow employees to update their personal data, make benefit elections, and enter time and attendance data.
  - Develop automated work flow and electronic approval to route and approve HR and payroll documents electronically.
  - Integrate HR and payroll systems with each other and with other business systems
  - Add multiple pay cycle capability (weekly, bi-weekly, semi-monthly, monthly) and consolidate DOT and central payrolls into a single system.
  - Develop an Ad Hoc reporting capability to support management reporting requirements.
    - ✓ *Pros*:
      - Enhancing the current system would provide additional functionality at low cost.
    - ✓ *Cons*:
      - The current system would still be operating on dated technology. The long-term danger is that it becomes unsupported. There are few resources to support current systems in the event of a critical or catastrophic event.
      - 95% of the DOT payroll system is based on the assembler programming language which is no longer supported
      - Over time it will become difficult to attract and retain resources that can support this dated technology
- Enhancing the existing HR/Payroll systems to meet the State's requirements is not a cost effective approach.

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Business Case – HR/Payroll Intangible Benefits of a New System

- Intangible benefits - Implementation-enabled strategic achievements that can not be quantified.

Improved Decision Making

- Improved ability to analyze staffing trends
  - Exit Interviews – Ability to report on statewide retention and attrition.
  - Job Analysis – Allows for competency based HR management
  - Succession Planning – Allows for competency based management
  - Improved ability to do job and salary surveys
- Improved management reporting
- Increase ability to assess and manage operational performance (training impact on performance, cost per hire, etc)

Increased Efficiency

- Reduced time for approvals
- Improved workforce training and development opportunities
- Eliminate redundant system efforts
- Integrated processes across functional areas
- Improved payroll processing due to new software and built-in best practices
- Increased efficiency and control in a consolidated statewide benefits program
- Quicker access to accurate, integrated employee information
- Improved reporting across the enterprise
- Workflow automation

Improved Service Level

- Improved ability to meet agency business needs
- Improved service levels through the use of web-based self-service functionality
  - Employee Self-Service – Increased options for Employee-Self Service
  - Manager Self-Service – Increased options for Manager Self-Service

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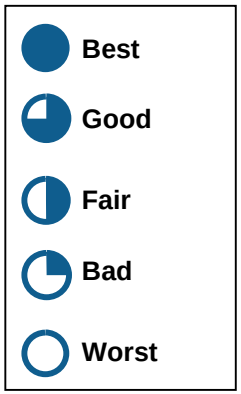
Business Case – HR/Payroll System Intangible Analysis

- Intangible benefits - Implementation-enabled strategic achievements cannot be quantified.

Value



	ERP	Outsourcing	Current System with Enhancements
Improved Decision-making			
Improved Process and Controls			
Improved Efficiencies			
Summary			

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Business Case – HR/Payroll Tangible Benefits

Tangible benefits can be quantified and calculated.

- Increased processing efficiency
  - Decrease the cost of operating multiple payroll systems (Central & DOT)
  - Reduce the cost of processing employment applications to fill positions
  - Minimize the number of Off-cycle checks and error corrections
  - Decrease the manual efforts required to produce payroll
  - Reduce the cost of producing reports
  - Condense payroll lead time
- Improved productivity of staff
  - Minimize time spent processing employee data by redirecting data entry tasks to employee self-service
  - Reduce and/or reallocate staff
- Reduce Capital Cost
  - NOTE: Minimal capital investment would be required should the state decide to outsource.

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Business Case – HR/Payroll Tangible Benefits Analysis

- The following chart depicts tangible potential cost reductions of Outsourcing versus an ERP solution.

Category	1 Year Annual Potential Cost Reductions Outsourcing	7 Years Potential Cost Reductions Outsourcing	1 Year Potential Cost Reductions ERP	7 Year Potential Cost Reductions ERP
Decrease the cost of operating multiple payroll systems (Central & DOT)	$1,700,000	$11,900,000	N/A	N/A
Reduction and/ or Relocation of HR staff	$19,510,408	$136,572,857	$3,251,735	$22,762,143
Reduction and/ or Relocation of Payroll staff	$5,988,578	$41,920,049	$998,096	$6,986,675
Improved Staff Productivity	$780,000	$5,400,000	$780,000	$5,400,000
Grand Total	**$27,978,987**	**$195,792,906**	**$5,029,831**	**$35,148,818**

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Business Case – HR/Payroll Tangible Benefits Assumptions

- General Assumptions:
  - To decrease the cost of operating multiple payroll systems (Central & DOT), we assumed that both outsourcing and ERP would replace the current systems.
  - The estimated average annual salary per FTE was $33,565 a year, plus 18% benefits (Social Security, Retirement, Health Insurance) of $6,042 for each employee.
  - Savings in staff productivity were based on current operating costs for the Central Payroll, DOT and PMIS/ELTS systems, which is $3,117,290. The American Payroll Association has stated estimated savings for implementing Employee Self Service (ESS) is between 25% to 30% a year. Our figures reflect a conservative 25% savings.
- Outsourcing Cost Savings Assumptions:
  - To calculate the cost savings in the reallocation of HR/Payroll Staff, based on our work in the State of Florida, we assumed Outsourcing would reduce the current HR headcount by 60% from 821 current FTEs to 328 FTEs and the current Payroll staff by 60% from 252 FTEs to 151 FTEs.
  - The savings for a reduction of capital costs are based on the service provider paying the upfront cost of the implementation of an outsourcing solution and upgrades.
- ERP Cost Savings Assumptions:
  - To calculate the cost savings in the reallocation of HR and Payroll Staff, based on our work in the State of Ohio, we assumed that an ERP system would reduce the current HR headcount by 10% from 821 current FTE's to 739 FTEs and the current Payroll staff by 10% from 252 FTEs to 227 FTEs.
  - There are no up front savings with an ERP solution.

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Business Case – HR/Payroll Tangible Benefits Assumptions (Cont'd)

- Headcount Reduction has been identified as a tangible benefit for both outsourcing and ERP package(s) replacement. While headcount reduction does provide financial benefit, there is a concern that a number of individuals will lose their ability to earn a living. Based on the Florida model, it is unlikely that this will be the case.
  - Florida's HR headcount was reduced by approximately 800 personnel
  - Florida required Convergys to hire approximately half of the existing 800 headcount
  - Approximately 100 staff left state employment through normal attrition (retirement, resignation, etc.)
  - Remaining personnel were reassigned to existing positions within the State
- It is reasonable to assume an outsource provider would hire some of the State's HR/Payroll staff. Others will leave through the course of normal attrition, and with approximately 3,000 new hires each year, the State will be able to place the remaining HR/Payroll staff in other state positions

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Business Case – HR/Payroll Current Systems Cost

- The following chart summarizes the State's existing core HR/Payroll systems cost.

Annual Operating and Maintenance Cost Approximations	Central Payroll System	DOT Payroll System	PMIS/ELTS	Grand Total
Cost Categories	**Estimated Costs**			
Staffing – State Employees (Development, Maintenance, System Support, Help Desk)	$ 370,997.00	$ 570,737.00	$ 679,557.00	$ 1,621,291.00
Staffing – State Functional Staff	$ -	$ -	$ -	$42,498,311.00*
Staffing – Contractor	$ 285,270.00	$ 180,000.00	$ -	$ 465,270.00
Technical Services (ITS charges for Mainframe, Telecom, Networking, etc…)	$ 244,220.00	$ 90,000.00	$ 675,000.00	$ 1,009,220.00
Licensing / ASP / Maintenance Fees	$ -	$ -	$ 10,500.00	$ 10,500.00
Training	$ 990.00		$ 1,000.00	$ 1,990.00
Miscellaneous Expenses	$ 4,649.00	$ 5,000.00	$ -	$ 9,649.00
TOTAL	**$ 906,126.00**	**$ 845,737.00**	**$ 1,366,057.00**	**$45,616,231.00**

* Based on a HR Staff of 821 FTEs and a Payroll Staff of 252 FTEs

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Business Case – HR/Payroll Current Systems Assumptions

- On the preceding slide, the current costs provide an estimate of the annual operation and maintenance costs for the core systems.
- The cost to operate and maintain the current system is much less than the State's other options. However, the risk of maintaining the status quo significantly exceeds the difference in cost.
- To determine the cost of the State's functional staff, we estimated a total number of HR Staff of 821 FTEs and a Payroll Staff of 252 FTEs. We then assumed the average salary was $33,565 and that the benefits were another $6,042 (18%). This determined the final cost figure.
- General guidelines and assumptions used in gathering the cost information include:
  - Costs are for the core agency supporting the system
  - FTE costs include the personnel directly responsible for supporting the system, as well as the cost of the various HR and payroll business users.
  - Costs captured include:
    - ✓ Technical system development and maintenance FTE costs
    - ✓ System support and operations FTE costs (e.g., running reports, bursting)
    - ✓ Help Desk FTE support
    - ✓ Maintenance, Licensing, and Application Service Provider (ASP) Fees
    - ✓ ITS charges for technical services (e.g., mainframe, networking)
    - ✓ Training costs to support the system
  - Costs **NOT** captured unless otherwise noted include:
    - ✓ Infrastructure and capital costs like PCs, printers, imaging equipment, and plotters.
    - ✓ FTE costs associated with using the system (e.g. system inquiry, manual processing costs in data preparation, manual systems being maintained to supplement the core system. etc.)
    - ✓ Any costs from agencies outside the core agency that use the system unless it is included in the ITS charges billed to the core agency
    - ✓ Data processing supplies or miscellaneous expenses unless included in the ITS charges
- If there are unique costs associated with the Operations and Support of a system the cost will be identified separately.

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Business Case – HR/Payroll Current Systems Assumptions (Cont'd)

- Central Payroll System Cost Clarifications and Assumptions:
  - Maintenance and operations costs provided by the Office of the State Controller and the Information Technology Expenditures Report are for the period ending June 30, 2002 and represent annual costs.
- DOT Payroll Cost Clarifications and Assumptions:
  - Maintenance and operations costs provided by the Department of Transportation and represent annual costs.
  - State employee costs include benefits calculated at 18% of salary.
  - State employee costs include 3 vacant clerk positions.
  - Training costs were not identified but are assumed to be minimal.
- PMIS/ELTS Cost Clarifications and Assumptions:
  - Maintenance and operations costs provided by the Office of State Personnel and represent annual costs.
  - Training, Miscellaneous Expenses, Licensing, ASP, and Maintenance Fees were not provided but could exist.
  - PMIS/ELTS ITS charges are expected to drop by approximately $25,000 next year.
  - The Licensing Costs include a one time $7,500 licensing fee.

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Business Case – HR/Payroll ERP Cost

- The information below represents average ERP Cost. The cost estimates differ slightly by ERP package.

NC Estimated Human Resources ERP Costs								
		Year						
Estimated Costs - Not Adjusted for Inflation	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
		----------Implementation---------		----------Benefits Period----------				
Integrator Costs	**$ 56,278,939**	**31,348,230**	**24,930,709**	**-**	**-**	**-**	**-**	**-**
Initial Hardware Acquisition Costs	5,193,311	1,882,182	3,311,129			-	-	-
Initial Software Acquisition Costs	16,478,505	15,399,017	1,079,488			-	-	-
Integrator Staffing	34,607,123	14,067,030	20,540,093			-	-	-
State Costs	**$ 8,215,963**	**3,609,504**	**4,606,459**		**-**	**-**	**-**	**-**
Implementation Hardware Maintenance	891,704	190,840	700,864		-	-	-	-
Implementation Software Maintenance	5,402,270	2,565,840	2,836,430		-	-	-	-
State Implementation Staffing	-					-	-	-
Implementation Overhead Costs	1,921,989	852,824	1,069,166			-	-	-
Annual Production Costs	**$ 22,439,576**	**-**	**-**	**3,573,917**	**4,065,706**	**5,256,767**	**4,222,983**	**5,320,204**
Production Hardware Maintenance	4,819,372	-	-	500,243	1,000,486	1,063,923	1,127,360	1,127,360
Production Software Maintenance	12,603,059	-	-	1,418,215	2,836,430	2,782,805	2,782,805	2,782,805
Program Management Office	-	-	-	-	-	-	-	-
Production Overhead	1,473,398	-	-	474,210	228,790	228,790	312,818	228,790
Upgrades	3,543,746	-	-	1,181,249		1,181,249		1,181,249
GRAND TOTAL	**$ 86,934,478**	**$ 34,957,733**	**$29,537,168**	**$ 3,573,917**	**$ 4,065,706**	**$ 5,256,767**	**$4,222,983**	**$ 5,320,204**

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Business Case – HR/Payroll ERP Cost Assumptions

- The ERP cost estimates were developed as follows:
  - Hardware and software cost are based on average pricing from various vendors.
  - Integration cost level of effort was based on estimates for the state of Ohio and adjusted for North Carolina.
  - A twenty-four month implementation period was selected including two months of project support and stabilization.
- Software cost are based on the individual HR and Payroll modules although vendors typically bundle these modules to provide more aggressive pricing.
- ERP costs and benefits were projected over a seven year period for comparison against an Outsourcing solution.

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Business Case – HR/Payroll Outsourcing Cost

- The information below represents the estimated cost of a seven year Human Resources outsourcing contract. Services include HR Admin, Time Collection, Benefits Admin, Learning, Staffing and Payroll.

Cost by Months	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
01 - 09	0							
10 - 12	$2,166,666							
13 - 24		$2,391,644						
25 - 36			$2,391,644					
37 - 48				$2,391,644				
49 - 60					$2,391,644			
61 - 72						$2,391,644		
73 - 84							$2,391,644	
Number of Months	12	12	12	12	12	12	12	84
Number of Payments	3	12	12	12	12	12	12	75
Sum of HR Payments	$6,499,998	$28,699,728	$28,699,728	$28,699,728	$28,699,728	$28,699,728	$28,699,728	$178,698,366
Sum of Payroll Payments	**$1,068,750**	**$4,275,000**	**$4,275,000**	**$4,275,000**	**$4,275,000**	**$4,275,000**	**$4,275,000**	**$26,718,750**
Grand Totals	$7,568,748	$32,974,728	$32,974,728	$32,974,728	$32,974,728	$32,974,728	$32,974,728	$205,417,116

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Business Case – HR/Payroll Outsourcing Cost Assumptions

- The HR cost estimates are developed based on the actual HR outsourcing contract from the State of Florida.
- The HR outsourcing contract includes the following functionality: Human Resources Administration, Payroll Preparation, Benefits Administration, Time Collection, Learning and Staffing.
- North Carolina outsourcing cost are estimated at 65% of Florida's outsourcing contract based on the ratio of employees between the two states.
- Payroll outsourcing cost were estimated to be $45 a year per employee. This is based on estimates provided to the State of Florida. Payroll functions include: Calculating gross to net pay, direct deposit, paycheck disbursement, 1099, and W-2 processing.

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Business Case – HR/Payroll Risks of Status Quo

- Issues/Concerns identified with the current HR/Payroll system are:
  - Existing systems are based on dated technology which will become very difficult to support over time
  - Current systems do not comply with the State's IT strategy for hardware and software.
  - A significant number of the State's key IT and HR/Payroll professionals are reaching retirement age.
  - Knowledge of core system functionality is limited to a few employees.
  - Lack of continued vendor support for these operating systems and databases will eventually become a major issue.
  - Supporting multiple HR/Payroll systems will require the State to incur excessive cost for redundant systems operations.
  - Existing levels for HR/Payroll support cannot continue without a move to more current technology platforms.

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Business Case – HR/Payroll Replacement Recommendation

- Based on the information collected from existing Payroll/HR operations, similar state initiatives and historical ERP projects, it appears outsourcing is the most cost efficient solution.

	Current System	ERP	Outsourcing
Implementation and Outsourcing Cost		$87,000,000	$205,000,000
Staff and System Operations Cost (Over 7 years)	$319,000,000	$319,000,000	$298,000,000
Potential Cost Savings (Over 7 years)	$0	$35,000,000	$196,000,000
Net Cost Analysis	$319,000,000	$371,000,000	$307,000,000

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Business Case – HR/Payroll Replacement Summary

- The chart depicted below summarizes the results of previous slides providing comparison across the major areas of analysis.

Value

- Best
- Good
- Fair
- Bad
- Worst

	ERP HR/Payroll	Outsourcing Solution	Current System with Enhancements
Intangible Benefits			
Tangible Benefits			
Cost			
Risk			
Summary			

After comparing the implementation alternatives, the best course of action to exceed the State's present and future HR/Payroll demands at a reasonable cost is Outsourcing or Implementing an ERP Package**.**

* Represents level of effort to bring current system functionality in line with ERP and stand-alone package.

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Business Case — *Tax and Revenue*

Tax and Revenue – Table of Contents

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Tax and Revenue – Brief Overview

- **Background:** The Department of Revenue (DOR) is responsible for all tax-based revenue collection activities of the State. These include individual income tax, corporate income tax, sales and use tax, payroll withholding taxes (other than UI), all excise and miscellaneous taxes.
  - Tracks 5.3 million individual taxpayers
  - Computes 2.5 million refund checks/year
  - DOR employs 1300 FTEs
- **Integrated Tax Administration System (ITAS):** Based on Accenture's TAS, this system was implemented in 1994 supporting 1300 users located in Raleigh, 26 in-state locations and 19 out of state locations.
  - Tracks taxpayer-related information
  - Processes tax returns and payment of taxes
  - Performs taxpayer accounting
  - Generates notices and correspondence with taxpayers
  - Provides some case management functionality
- **Revenue Collections and Accounting System (RCA):** A custom developed add-on to ITAS that performs the base revenue accounting functions for all Departmental tax receipts, refunds, transfers, and distributions to local governments.
- **JETS Tax System:** A java-based web-enabled system that handles small miscellaneous taxes.
- **Recent Enhancements:** Imaging and Data Capture (OCR-ICR), Electronic Filing (ELF), EFT, Online Filing and Payments (OFP), Remittance Processing, Case Management and Customer Relationship Management (CRM) Software as part of Taxpayer Assistance and Collection Center (TACC) project
- **Planned Enhancements:** Ongoing expansion of OFP and Payment Agreement (2004)

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Tax and Revenue – System Vision

- A comprehensive tax and revenue collection system addresses the following key objectives:
  - Provide efficient exception processing
  - Provide account prioritization and scoring modeling to maximize audit and collections with the most lucrative and collectible accounts
  - Provide improved notice and correspondence capability
  - Provide improved reporting capabilities that will support timely generation of management reports, ad hoc and complex reporting and analysis
  - Improve tool kits for audit and collections to provide field personnel with the industry's latest mobile audit collection tools
  - Provide online, real-time generation of forms
  - Provide integrated taxpayer customer service

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Tax and Revenue – Gaps Identified in Phase I

- Current Tax and Revenue System Gaps:
  - The notice and correspondence generation facility (DCF) is dated and not flexible enough to support all DOR needs
  - The system is limited in being able to generate forms on a real-time basis
  - The existing Tax and Revenue system cannot easily produce management and ad-hoc reports in the required user timeframes
  - The system does not provide online account inquiry for taxpayers

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Tax and Revenue – System Replacement Options

- Short-term Options Recommended:
  - **Enhance the current system and reassess the replacement strategy in five years**
    - ✓ The ITAS system is approximately half way through its estimated useful life. ITAS provides the State with the basic tax and revenue functionality it requires. This indicates there is no immediate need to replace ITAS. However, the State can benefit from continued functional enhancements.
    - ✓ Enhancements may include:
      - Improved collection work flow and installment plan processing
      - Collections scoring software
      - Data warehouse software
      - Continued expansion of web enabled customer self-service
      - Software replacement for DCF and QMF
- Long-term Commercial Off-the-Shelf (COTS) Options Include:
  - **Enterprise Resource Planning (ERP)**
    - ✓ Provides best approach for integrated processing
    - ✓ Becoming more acceptable in Public Sector
    - ✓ Lower implementation costs than a transfer solution
    - ✓ Vendor supported software with upgrades, system maintenance and training
  - **Software Transfer Solution**
    - ✓ Traditionally the solution implemented by Tax and Revenue
    - ✓ High functionality specific to tax processing
    - ✓ Limited ongoing support and upgrade capability

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Tax and Revenue – Current Opportunities in North Carolina

- Audit Selection and Processing
  - Current North Carolina audit processes and selection tools are satisfactory by many standards. However, the state can benefit from implementing a modern data analytics tool and prioritization model.
  - Audit enhancements may include opportunities such as:
    - ✓ Audit Productivity: Productivity improvements to create additional audit capacity and increased compliance
    - ✓ Audit Selection: Data warehouse provides analytical reports for selecting and scoring audit candidates
- Non-Filer Discovery
  - A data warehouse can improve the efficiencies of matching Federal, State, and private entity files with DOR records to identify Individual and Business taxpayers who failed to file returns.
  - Once a non-filer has been discovered, the amount of revenue recovered continues to grow over time because that filer is now required to file not just the current year, but all future years.
- Collections
  - Collection enhancements should include opportunities such as:
    - ✓ Data warehouse providing compliance program effectiveness reports
    - ✓ Collections scoring software package to prioritize and model potential collection cases
- Noticing and Report Writing
  - Software replacement for the current noticing (DCF) and report writing (QMF) software

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Business Case – Tax and Revenue Intangible Benefits

- Intangible benefits - New system implementation-enabled strategic achievements that can not be quantified.

Improved Decision Making

- More timely and accurate data
  - Provide enhanced reporting and access to information
  - Increased automation of non-complex tasks
  - Frees up FTE's for more value-added tasks
- Faster implementation of legislative changes
  - Allows DOR to be more responsive to annual legislative changes
- Better management of staff resources
  - More knowledgeable and informed staff will allow for the incorporation of Best Practices

Improved Processes & Controls

- Default adoption of industry best practices
  - Incorporates best practices from other tax agencies
- Enhanced workflow management for audit and collections
  - Incorporates more robust field audit and collections tools
- Improved tracking and reporting
  - Easily consolidates and tracks payments
- Improved processes across functional areas and between organizations
  - Increases coordination between DOR and other agencies

Improved Customer Service

- More timely response to customer correspondence
  - Provides remote and local printing for rapid field responses to queries
- More timely notification of problems
  - Decreases exception processing through robust error checking and correction software
- Increase ability for customers to access and maintain their accounts 24/7
  - Expands CRM functionality beyond planned call center through more self-service initiatives across agencies
- Increase more consistent taxpayer communication

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Business Case – Tax and Revenue Intangible Benefits (Cont'd)

- Intangible benefits - Implementation-enabled strategic achievements cannot be quantified.

Value

- Best
- Good
- Fair
- Bad
- Worst

	ERP Package with Tax Module	Transfer Package Solution	Current System with Enhancements
Improved Decision-making			
Improved Process and Controls			
Improved Customer Service			
Summary			

Both ERP Package with Tax Module and Transfer Package Solution are considered specialized COTS options.

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Business Case – Tax and Revenue Tangible Benefits

Tangible benefits are those benefits that are calculable.

- For Tax and Revenue, it is anticipated the most significant benefits will be obtained through the use of improved decision analytics through a cross-agency data warehouse and an audit/collections prioritization and scoring model.
- The following are anticipated tangible benefits within a new system:
  - Increased compliance (audit dollar recovery)
    - ✓ Enhanced decision-analytics capabilities can measure the probability of payment and facilitate more profitable audit resource use
    - ✓ Better targeted audits would result in an increased accounts receivable balance, yielding more overall collections
    - ✓ The latest non-filer discovery techniques could be more effectively employed to bring more of the population into compliance
  - Improved collections
    - ✓ Data warehousing would enhance the ability to identify delinquent taxpayers that have returned to the State
    - ✓ Using data analysis techniques, DOR should be able to improve accounts receivable collections and ultimately reduce accounts receivable write-offs
  - Ongoing collections management
    - ✓ Again, enhanced decision-analysis will allow for an increased amount collected per collector resulting from enhanced targeting of collectible accounts and the identification of more non-filers (for transfer to audit)

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Business Case – Tax and Revenue Tangible Benefits (Cont'd)

10 Year Estimated Benefit Period

	ERP with Tax & Revenue	Transfer Package Solution	Current System with Enhancements
Collections	$5,821,330	$6,652,948	$4,989,711
Decision Analytics	147,658,640	168,752,729	126,564,547
Field Audit	75,371,069	86,138,364	64,603,773
Discovery	647,067	730,891	563,244
Summary	$229,498,106	$262,274,932	$196,721,275

- Benefit calculations for ERP and Transfer were estimated based on similar state projects and primarily result from increased collections. Projections have been normalized to reflect size and complexity of other state projects.
- Transfer Package Solution benefits are estimated higher than ERP based on assumption that additional customization possible with this solution would result in enhanced North Carolina functionality.
- ERP and Software Transfer Solution Options include both up front and ongoing enhancement benefits.
- Benefits for the Current System with Enhancements Option are less due to the age and modification complexity of the existing system.

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Business Case – Tax and Revenue Replacement Cost Summary

10 Year Estimated Cost Period

	ERP with Tax & Revenue	Transfer Package Solution	Current System with Enhancements
Enhancements to Current System	$31,806,049	$31,806,049	$27,866,220
Estimated Software Package	6,736,383	8,173,949	0
Implementation Costs	36,069,179	44,629,397	0
Ten Year Operating Costs	110,096,493	101,502,197	84,499,890
Total Cost	$184,708,104	$186,111,592	$112,366,110

- Enhancements to current system reflect a different implementation mix for the Current System verses other two alternatives. Enhancements include hardware/software and contractor implementation services for data warehouse and decision analytics, receivable scoring, audit workbench and mobile collection.
- ERP and Transfer Package solution include front-end enhancement and transition from Current System to replacement solution.
- Differences between implementation costs of ERP and Transfer solutions are attributed to customizations required with Transfer vs. changes to business process with ERP.
- Enhancements to Current System costs are not included within the Ten Year Operating Costs.
- Ten Year Operating Costs include annual maintenance fees of; 20% ERP, 10% Transfer Solution and Current System actual expenditure reported.

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Business Case – ERP Summary

- Intangible Benefits:
  - The ERP solution provide improvements across the following areas: decision making, processes and controls, and customer service.
- Tangible Benefits:
  - An ERP solution would allow the State to obtain benefits comparable to that of a Software Transfer solution. For this reason, similar state projects were reviewed to develop expected benefits.
  - Benefits derived from increased audit and collection case modeling and prioritization functionality would result in increased data analysis and field audit capabilities.
- Cost:
  - Transition from the current system to an ERP would be comparable to a large Software Transfer solution implementation. Potential cost difference may result from software maintenance fees incurred after implementation (approximately 17-20% of hardware and software purchase prices).
- Risk
  - No Personal Income Tax (PIT) package has been successfully developed. There is interest but it must become a priority for ERP vendors.
  - SAP is the only ERP vendor with a viable tax and revenue solution. Progress on this implementation should be monitored to determine if this solution is viable.
  - To implement an ERP solution— the state must evaluate incorporating best practice in operations to avoid costly customization.

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Business Case – Software Transfer Solution Summary

- Intangible Benefits:
  - A Software Transfer solution would provide improvements across the following areas: decision making, processes and controls, and customer service.
- Tangible Benefits:
  - A Software Transfer solution would provide the State benefits comparable to that of an ERP solution. For this reason, similar state projects were reviewed to develop expected benefits.
  - Benefits would be derived from increased audit and collection case modeling and prioritization functionality and result in increased data analysis and field audit capabilities.
- Cost:
  - Implementation costs would be higher than an ERP implementation due to customizations required with Transfer vs. changes to business process with ERP. However, post-implementation maintenance fees of approximately 5-10% are less than the 17-20% for an ERP solution.
  - Transfer Solution costs would be slightly higher than the ERP over a 10 year period but significantly higher than the Current System with Enhancements over the same period.
- Risk:
  - Typically Transfer Solutions are not supported by vendors after initial implementation. Additional fees will be required for post-implementation support.
  - Risk to the State to support a “One of a Kind” solution should be determined.

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Business Case – Current System with Enhancements Summary

- Intangible Benefits:
  - Existing personnel are familiar in their current job responsibilities.
  - The existing support organization would not experience significant change to continue support of the system.
- Tangible Benefits:
  - With the implementation of data warehousing and collections enhancements, the Current System with Enhancements would result in less benefits over a ten year period than the other two options. Expected benefits would taper off as the existing system reached the end of its useful life.
  - Tangible benefits would be gained by implementing enhancements that have not been procured (enhanced field audit capabilities, data warehousing and decision analytics, etc.).
- Cost:
  - The Current System with Enhancements option yields the lowest level of incurred costs.
- Risk
  - The most significant risk results from missing potential collectables. Without a sophisticated scoring or prioritization tool, auditors and collectors are not maximizing efficiency.
  - Over time, North Carolina may experience trouble maintaining its technical workforce as they begin moving to other companies with more current systems and robust platforms that allow them to continue increasing their skill-sets.
  - Enhancements investment may not extend the useful life of ITAS for 10 years.

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Business Case – Tax and Revenue Risks of the Status Quo

- Audit and Collections:
  - Limited funding and resources have constrained the ability of the Department from moving to newer technologies and processes.
  - Currently, DOR does not have a sophisticated audit or collections prioritization or scoring model to determine best cases for collection and improved yield rates.

- Customer Service:
  - Without continued investments in technology, DOR will fall behind customers expectations for automation and self-service.

- Other: DOR has recognized the need for enhancements; however, lack of additional funding has prevented the implementation of these plans.
  - Without a data warehouse, DOR will spend significant funds and resources to provide statistical analysis to support tax policy decisions.
  - Technology upgrades can provide DOR with the ability to more efficiently incorporate legislative changes and more efficiently leverage personnel resources in meeting agency mandates.

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Business Case – Tax and Revenue Replacement Summary

- The chart depicted below summarizes the results of previous slides providing comparison across the major areas of analysis.

Value

- Best
- Good
- Fair
- Bad
- Worst

	ERP Package with Tax & Revenue	Transfer Package Solution	Current System with Enhancements
Intangible Benefits			
Tangible Benefits			
Cost			
Risk			
Summary			

After comparing the implementation alternatives, the recommendation is to **enhance the current system** through the addition of scoring software, web enabled processing and payment, and a tax and revenue data warehouse. At the end of 5 years the system should be reviewed for a possible replacement strategy. This course of action will allow DOR to meet present and future tax and revenue demands.

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Replacement Strategies

Implementation Option Benefits and Risks (existing systems)

Option 1 Leverage and Extend Existing Business System – HR/Payroll Replacement	Option 2 Phased Implementation by Best of Breed	Option 3 Single ERP Solution
Benefits	**Benefits**	**Benefits**
1. Recognizes Funding and Environmental Constraints	1. Phased Approach requires less change management effort	1. Completely Integrated Core Business Systems
2. Minimal Initial Investment	2. Small Initial Investment	2. Standard Statewide Technical Platform
3. Minimal Change Management Impact	3. Best Practices Functionality	3. Best Practices Functionality
4. Less Staffing Resources over a longer period of time	4. Maintains Project Momentum	
Risks	**Risks**	**Risks**
1. Increases Likelihood of Legacy System Failure	1. Requires Interfaces and Data Exchanges to Provide Integration	1. Major Change Management Challenge
2. Loss of Momentum Resulting in Project Failure	2. Employs Multiple Open Technical Platforms	2. Significant Initial Investment
3. Significant Delay in Benefits Realization	3. New Technical Skills Required	3. Aggressive Implementation Approach
4. Requirements may be Out of Date at Time of Implementation		4. New Technical Skills Required
5. Requires Interfaces and Data Exchanges to Provide Integration		5. Potentially Dependent on Single Vendor
6. Employs Multiple Open Technical Platforms		6. Costly Technical Infrastructure
7. New Technical Skills Required		
Observations	**Observations**	**Observations**
Minimum initial cost/ investment to meet some business needs and to mitigate risk of immediate failure for certain key systems; Addresses current budgetary restraints.	Best compromise of business and technical approach; however, may be too aggressive for the current political and economic environment.	Ideal business and technical approach; Significant up front investment; Therefore, may not be feasible in current environment.

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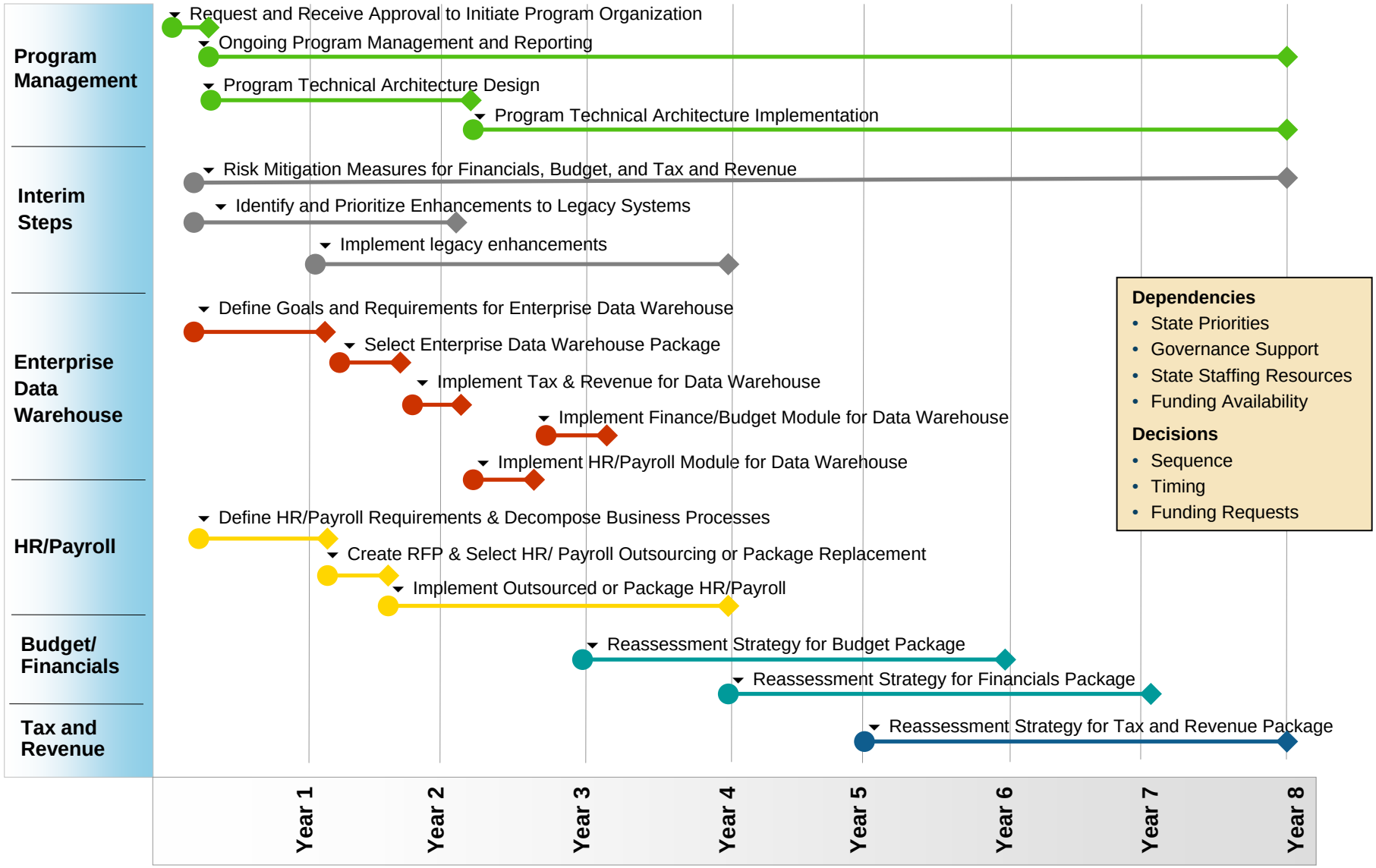
Option 1 — Leverage and Extend Existing Business System – HR/Payroll Replacement



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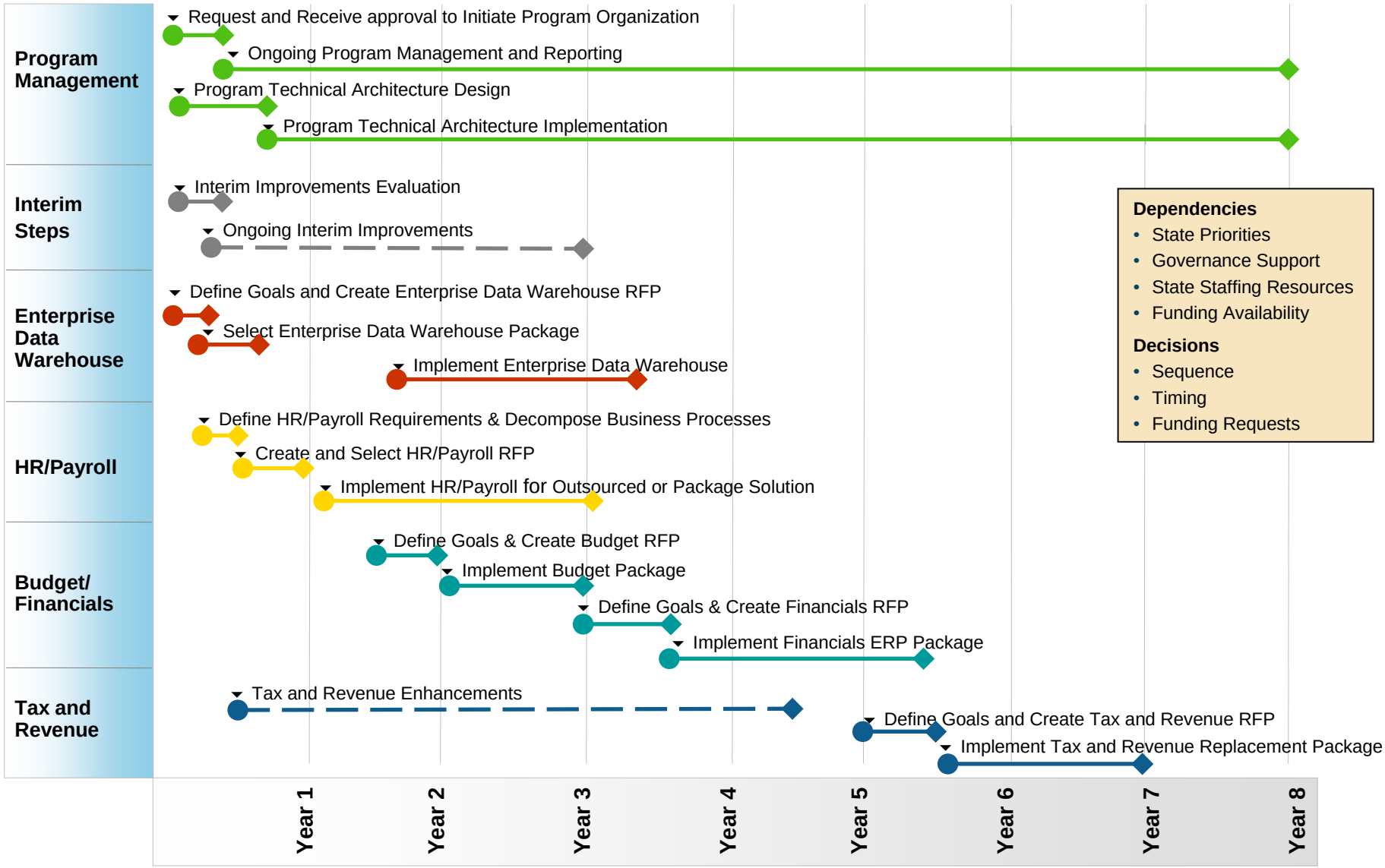
Option 2 — Phased Implementation by Best of Breed



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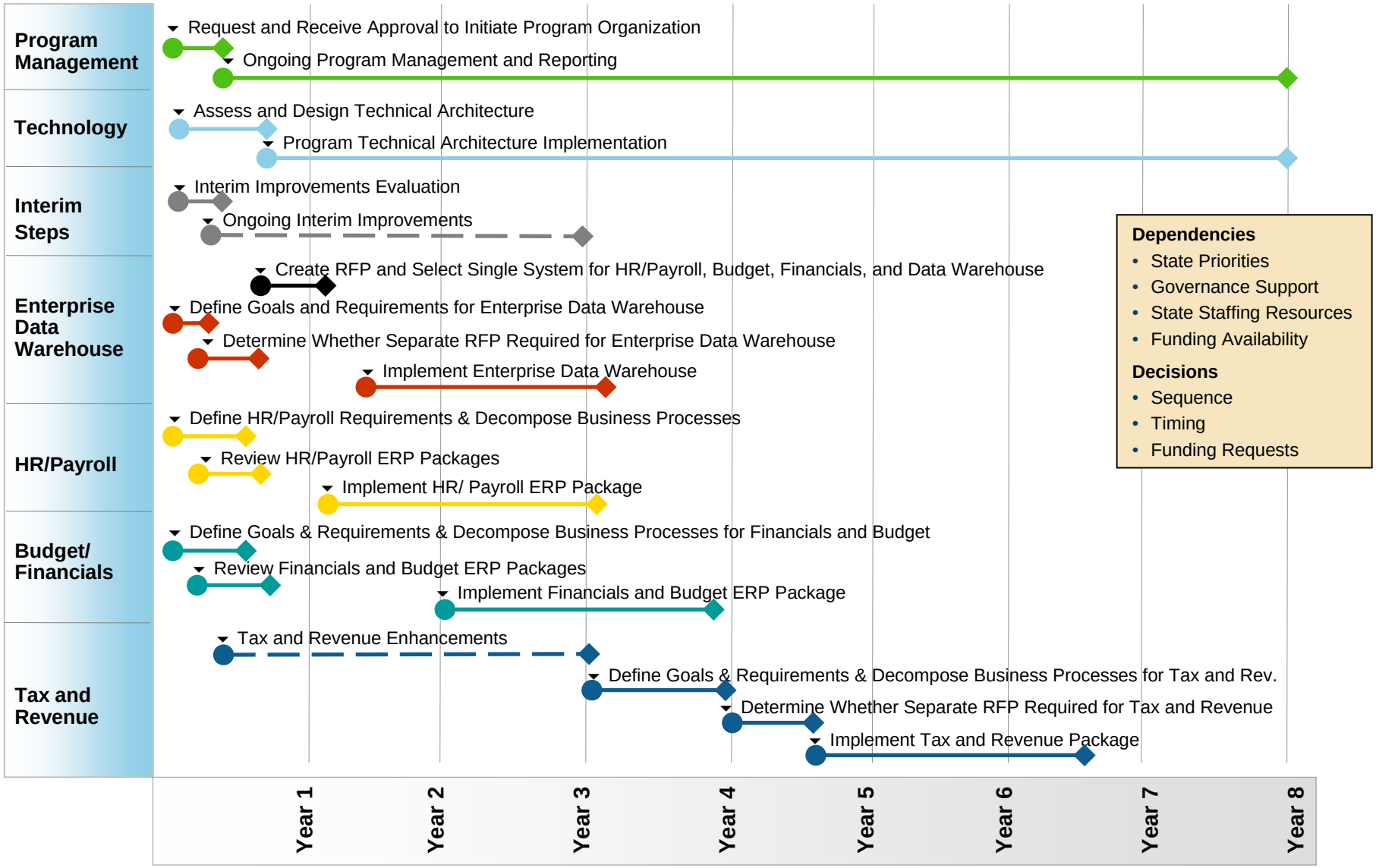
Option 3 — Single ERP Solution



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Legacy System Assessment – Analysis for Extended Approach

Application	Cost of Maintenance and Operations	Meets Business/ Program Needs	Immediate Risk	Actions for Extended Approach
NCAS/Cash Management (Financials)	Acceptable	Functional	Personnel	Mitigate risks, identify and evaluate short-term and cost-effective improvements, and reassess in future time-frame
BPS/ BRS/ SCS (Budget)	Acceptable	Functional	Personnel	Mitigate risks, identify and evaluate short-term and cost-effective improvements, and reassess in future time-frame
ITAS (Tax and Revenue)	Acceptable	Functional	Lost Revenue	Mitigate risks, identify and evaluate short-term and cost-effective improvements, and reassess in future time-frame
PMIS (HR/ Payroll)	Acceptable	Functional	Personnel and Business Needs	In short-term, evaluate and prepare for two options: 1. Outsource 2. Insource (New HR/ PR system)
Payroll	Acceptable	Functional	Personnel and Technical	Include with PMIS actions above
Enterprise Data Warehouse	New System	New System	New System	Bridges significant functional gaps in the above systems; In short-term, define goals, requirements and approach; Implement by module

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Prerequisites for Success

Prerequisites for Success – Table of Contents

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Prerequisites for Success – Summary Observations

- Large IT Projects are risky
  - Include multiple, complex, and interrelated technical environments:
    - ✓ Many disparate technical components that must work together
    - ✓ Telecommunications, application integration, data management and security issues
  - They impact multiple diverse constituencies – presenting different organizational and cultural perspectives and expectations
  - Require strategic and fundamental changes in business processes and program operations that involve large economic investments and political risks
  - More susceptible to normal system implementation challenges:
    - ✓ Scope Creep – must manage to original objectives to meet budget
    - ✓ Requirements not fully documented or misunderstood – prerequisite for meeting business and program goals and needs
    - ✓ Personnel, budget, and schedule constraints – must be realistic in plans and manage resources carefully to ensure sufficient capabilities
  - Effective only if “Knowledge Transfer” is successful

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Prerequisites for Success – Governance

- Governance is: **Authority, responsibility, and accountability for making decisions**. Well defined project Governance helps to mitigate risk.
- Governance includes – organizational structure, scope of command and control, and processes and procedures, including:
  - A well defined project organization:
    - ✓ Project owners, champions, or sponsors – Authority and commitment to drive the project to a successful completion
    - ✓ A Steering Committee
      - o Represents the various business, technical and program functions
      - o Ensures system commonality and integration, and quality of systems
    - ✓ A Program Management Committee and a Project Management Office
    - ✓ Organizations and users involved in and affected by project
  - Program and Project Management Disciplines and Practices
    - ✓ Project charter – Identifies objectives, key personnel, reporting relationships, decision making processes and other governance rules and roles
    - ✓ Issue resolution and change control policies and procedures
    - ✓ Documented project management and reporting standards
    - ✓ Formal quality assurance policies and procedures

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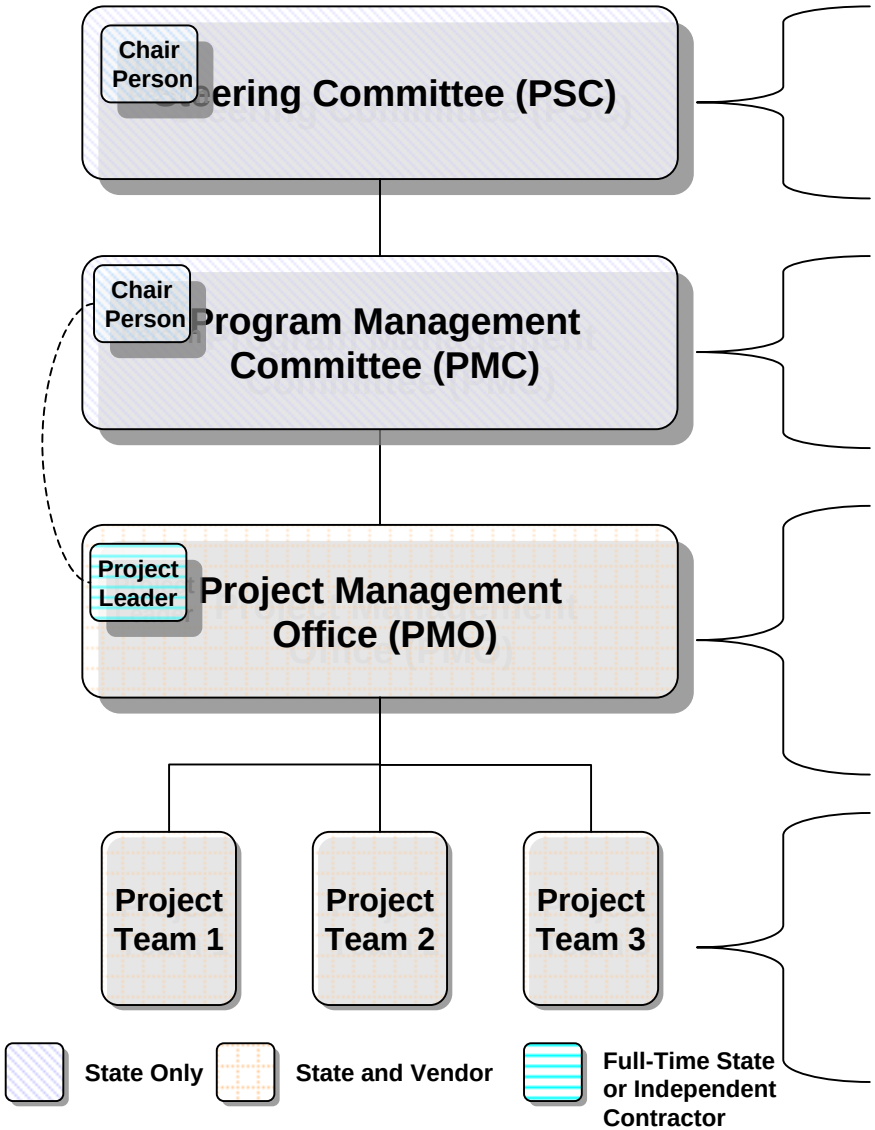
Prerequisites for Success – Governance Structure



- Top State Executives (5+ members with alternates)
- Leads program—responsible and accountable for results/ outcome
- Allocates funds and approves all project financial decisions
- Sets policies and makes final decisions for escalated issues
- Meets bi-weekly or monthly

- Senior Managers with technical, business, and/or program knowledge/ expertise
- Members must understand and share vision, goals and objectives of program
- Provides guidance and coordination across projects, agencies and program areas
- Maintains decision making authority for normal activities
- Makes funding recommendations to PSC
- Meets weekly or more frequently as desired

- Performs common project administrative tasks
- Establishes uniform project management standards, procedures, tools and reporting
- Compiles status reports for PMC and PSC
- Prepares and monitors integrated program management plan for milestone schedule, costs and quality of work/ deliverables
- Monitors enforcement of project management standards per IEEE/ PEMBOK
- Performs risk assessment and quality management for each project

- Each project has a dedicated project manager who:
  - Prepares and executes the detailed project plan
  - Directs day-to-day work
  - Identifies and resolves or escalates issues and problems
  - Ensures quality of work/ deliverables
  - Manages vendor performance
  - Anticipates and manages risks
  - Monitors and reports status (budget, schedule and deliverable performance)
  - Reports to PMO/ PMC

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Prerequisites for Success – Governance Roles & Responsibilities

- Steering Committee
  - Composed of project owners
  - Lead project - Responsible and accountable for the project outcome
  - Control project funding and approve all financial decisions
  - Set policies and make final decisions for escalated issues
  - All future core business IT projects approved and incorporated under the auspices of the steering committee
  - 5 Participants with alternates (odd number) including a chairperson – Small agile group able to make and act on decisions
  - Meets bi-weekly or monthly

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Prerequisites for Success – Governance Roles & Responsibilities

- Program Management Committee (PMC)
  - Provides leadership, guidance, coordination and integration across projects, business functions and agencies
  - The PMC makes funding recommendations to the Steering Committee
  - Members must have decision making authority for day-to-day project operations
  - Managers with proven knowledge and experience in their functional and technical areas
  - Members must understand and share the enterprise vision
  - Will require significant time and effort from each member
  - 1-2 representatives from ITS and each of the business/program owners
  - Specialized subject matter experts included as required and needed
  - Includes full-time state and/or independent contractor project leader(s) to facilitate communication with the PMO
  - Meets weekly and more frequently as required

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Prerequisites for Success – Governance Roles & Responsibilities

- Project Management Office (PMO)
  - Performs administrative tasks for each project
  - Provides administrative coordination and integration tasks across projects
  - Establishes standards, procedures, tools and reporting for projects
  - Monitors enforcement of standards, procedures and Pembok/IEEE Guidelines
  - Compile Status Reports for the Management Project Committee and the Steering Committee
  - Coordinate and monitor all Project Management Plan (PMP) activities for each project
  - Prescribes and monitors specific project milestones for each project component
  - Responsible for coordinating RFP development, updating the PMP and reviewing deliverables
  - Provides reusable work products and tools
  - Tracks issues and resolutions
  - Performs risk assessment and recommends mitigation strategies
  - The PMO performs quality management for each project component

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Prerequisites for Success – Governance Risks

- Qualified and experienced staff - Availability of sufficient strong project managers and skilled functional and technical staff may be limited
- Ability to address cultural changes and institutional resistance
- Adequacy of budgets and flexibility for expenditures
- Staying power and political will to see the program and its individual projects through to the end

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Prerequisites for Success – Governance Ownership

- Every successful large IT project has strong project ownership
- The project owner is a person or group:
  - Responsible for the success of the project
  - Who sponsors the project with Executive Management
- The owner(s) should be at the executive management level
- The owner(s) should garner and maintain the support of the highest levels in government for the project
- The owner(s) should have the authority to build consensus among the various stakeholders
- The owner(s) is the final decision making authority with regard to project direction, scope, budget, schedule and issue resolution

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Prerequisites for Success – Governance Contract Management

- All of the replacement options currently under consideration will require the State to perform some level of vendor/contract management.
  - Hardware and software vendor contracts will have to be managed to ensure that support, ongoing maintenance, and software upgrades are provided in accordance with the contract.
  - It is equally important to actively manage outsource contracts. All of the business activities must be identified and assigned to either the outsource provider or the State. Unassigned or unidentified activities will default to State.
  - The outsource contracts must also be closely managed to ensure that the outsource provider fulfills the terms of the contract at the performance levels prescribed by the contract.
  - The state should consider the use of performance based contracts and best value based vendor selection
  - The state must utilize coordinated experience and expertise from technology, business, legal, program, procurement, and other areas to successfully procure and manage the vendors

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Prerequisites for Success - Governance Contract Management (Cont'd)

- Integration vendors and implementation services contracts require a more detailed level of vendor/contract management. In addition to managing the vendor to the terms of the contract, the State must also manage:
  - Project Scope – To ensure that the vendor delivers the full scope in accordance with the contract and the original project objectives. Also to prevent scope creep which generally leads to change orders and additional cost.
  - Project Schedule – As part of the implementation process both the systems integrator and the State will provide resources and have responsibility to complete tasks. Delays in the completion of tasks on the critical path can result in project overruns.
  - Deliverable Quality and Accuracy – While it is the vendor's responsibility to provide quality deliverables, it is the State's responsibility to review, approve, and accept these deliverables.

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Prerequisites for Success – Business Process Reengineering

- Replacing the current business infrastructure with more up-to-date business application systems is not in itself the solution to the problem. The current business processes must also be updated.
- The current business processes should be reviewed to determine:
  - If there are changes that can be made to the current business processes to improve efficiency and effectiveness even before the new systems are implemented
  - If the business processes need to be changed to support the new systems
  - Experience shows that both of these are likely to be the case
- Additionally the business process review is particularly important in regard to outsource contracts.
  - Each business process should be decomposed to the activity level
  - Each activity must be assigned to the State or the outsource provider

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Prerequisites for Success – People and Skills

- The replacement of the current business systems infrastructure is sure to have a significant impact on the State's business organizations (OSC, OSBM, OSP, ITS, DOR).
- Technical Organization
  - The replacement systems are likely to require technical skills that are not currently available within the State.
  - DOT's BSIP system is hosted outside of state government because the State didn't have the required technical skills and was not able to recruit them.
  - The ability to attract and maintain the required technical resources is also a key consideration in deciding between in house implementation, hosted solution and business process outsourcing.

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Prerequisites for Success – People and Skills (Cont'd)

- In addition to the technical staff, the new systems are also likely to have a significant impact on the business staff as well.
  - For example, to the extent that it is possible to move some HR activities (e.g. address change, name change, benefits election, etc.) to the employee, what happens to the HR staff who are currently processing these transactions?
- It is important to perform an organizational impact study shortly before the start of or during the early stages of the system replacement project.
  - Identify the types of resources that will be required to support the new system
  - Match existing staff to support requirements
  - Identify staff to be retrained and/or reassigned
  - Identify staff to be released
  - Identify unfilled staffing requirements

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Prerequisites for Success – Culture for Change

- The preceding slides discuss the changes in technology, business processes and people skills that will result from replacement of the current business systems infrastructure.
- In addition to planning these changes, the State must also prepare the organization for the change.
- Assess the appetite for change
  - For example HR users have been asking for changes to the HR system and process for years. The folks who actually operate and maintain PMIS feel that it is doing most of the things it needs to do.
  - Each of these groups will react differently to the changes that will result from the HR/Payroll system replacement.
  - Identify areas within the organization that are resistant to change
  - Evaluate the risk associated with each area of resistance

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Prerequisites for Success – Culture for Change (Cont'd)

- Develop a change leadership plan.
  - Communicate the need for the change.
  - Identify the impact of the change for each individual
    - ✓ How will my job change?
    - ✓ Will I still have a job?
  - Identify training requirements.
  - Identify staff reassignments and/or terminations.
  - Develop a risk mitigation strategy.
- Develop a communications plan to provide ongoing communications throughout the life of the project.
  - Project Status
  - Expected Benefits
  - Implementation Strategy

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Prerequisites for Success – Technology Architecture & Infrastructure

- Because large IT projects can involve multiple technologies, it is important to define the Technology Infrastructure prior to the start of the project.
  - The technical infrastructure for the overall project must be identified before the project starts e.g.,
    - ✓ Operating Systems (UNIX, OS390, etc)
    - ✓ Network
    - ✓ System integration and data exchanges
    - ✓ Databases and development tools
  - The project also needs its own technical infrastructure to support the project team during the implementation e.g.
    - ✓ Software and hardware to operate “sandboxes” and development environments
    - ✓ LAN to support the project team
    - ✓ Access to test and training environments
    - ✓ Development tools
    - ✓ Project management tools

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Prerequisites for Success – Enterprise Funding Model

- One of the primary reasons that large IT projects fail to achieve the expected benefits is inadequate funding.
- It is important that the funding model be identified for each project component (HR, Financials, Budget, Tax and Revenues) prior to starting the component).
- Funding Models include:
  - Appropriations
  - Capital Appropriations
  - Benefits Funded Projects
    - ✓ Based on benefits received not expected
    - ✓ Benefits must be real and measurable
  - Federal Grants
- The funding model must provide all of the required funding or the expected benefits will not be achieved.

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Conclusion

Conclusion — Table of Contents

- Conclusion and Recommendations
- Risks of status quo
- Prerequisites for Success
- Extended Implementation Advantages and Disadvantages
- Phased Implementation Advantages and Disadvantages
- Integrated ERP Advantages and Disadvantages

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Conclusion and Recommendations

- Summary of Current Environment
  - The State of North Carolina's current business infrastructure is aging and is technologically outdated
    - ✓ In addition, the Budget Preparation System and Central Payroll System, although well-maintained, are highly dependent on individual support staff
  - The current business systems lack functionality to support the State's critical business needs and public expectations within today's emerging technologies
  - These issues coupled with the general lack of integration among these systems make it very difficult to produce executive management level data for decision making and policy formulation
  - The State faces significant risks if it elects to maintain the status quo

- Summary Recommendation
  - The current business system infrastructure should be replaced within the next two to seven years.
    - ✓ The HR/Payroll systems need to be replaced in the near term (in a two-year timeframe)
    - ✓ The Financials, Budget Preparation, and Tax and Revenue systems are candidates for longer term replacement

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Findings by Business System

➢ The table below outlines the current status of each key core business system.

System[1] / Age	Ability to Satisfy Current and Future Business and Program Requirements		Current Technical Architecture[2]	Likelihood of Risk due to Failure		Primary Short Term Risk Factor
	Current	Future		Short-Term	Long-Term	
NCAS (Finance) / 9 Yrs	Acceptable	Acceptable	Dated	Moderate	High	Support Staff
CMCS (Cash Management) / 20+ Yrs.	Barely Acceptable	Not Acceptable	Outdated	High	High	Technology and Support Staff
Budget Systems / 16 – 20 Yrs.	Acceptable	Not Acceptable	Outdated	High	High	Technology and Support Staff
PMIS (Human Resources) / 25 Yrs.	Barely Acceptable	Not Acceptable	Outdated	High	High	Technology and Support Staff
Central Payroll / 20+ Yrs.	Barely Acceptable	Not Acceptable	Outdated	High	High	Technology and Support Staff
DOT Payroll / 30+ Yrs.	Barely Acceptable	Not Acceptable	Outdated	High	High	Technology and Support Staff
ITAS (Tax and Revenue) / 9 Yrs.	Acceptable	Acceptable	Dated	Low	Moderate	None of note
Enterprise Warehouse	Non-existent	Non-existent	Non-existent	Non-existent	Non-existent	New system

[1] While Core Banking, DOT Financial, eProcurement and retirement systems were inventoried during Phase I, they are excluded in this analysis due to finalized plans for replacement

[2] Current Technical Architecture ratings reflect experience factors and historical trends in technology.

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Summary of Options

- The table below summarizes the three implementation options with descriptions and comments.

Alternatives	Summary Description	Comments
Option 1 – Leverage and Extend Existing Business Systems – HR/Payroll Replacement	➢ Initiate Program Office structure ➢ Initiate risk reduction measures for existing systems high risk areas ➢ Identify and prioritize enhancements to legacy systems ➢ Define and implement an enterprise Data Warehouse to support legacy systems and future implementations ➢ Define HR/Payroll requirements, select and implement replacement strategy ➢ Develop strategies for future replacement of existing financials, budgeting, and tax and revenue systems	➢ Minimal initial costs/investment to address existing business needs ➢ Mitigates risks of immediate failure for key systems ➢ Increase likelihood of failure over time due to existing systems and projects
Option 2 - Phased Implementation by Best of Breed	➢ Initiate Program Office structure ➢ Implement systems replacement - phased approach ➢ Define requirements, selection & implement: ▪ Data warehouse - year 1 ▪ HR/Payroll In house or outsourced – year 2 ▪ Finance and Budget implementation - year 3 ▪ Tax and Revenue systems - year 5	➢ A compromise between available up-front funding and the timely implementation ➢ Improves business processes ➢ Mitigate risks of business, technical, and/or security failures ➢ May be too costly in the near-term for the State's budget situation
Option 3 – Single ERP Solution	➢ Initiate Program Office structure ➢ Support aggressive implementation of a phased ERP package(s) ➢ Define & Implement: ▪HR/Payroll ▪Data Warehouse ▪ Financial and Budget ▪Tax & Revenue	➢ Best business and technical approach ➢ Provides most benefits ➢ Requires significant up-front investments ➢ Funding may not be available due to the State's current budget situation ➢ Major change management challenge

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Conclusion and Recommendations – Option 1 Extended Implementation

- While we believe that the Phased Implementation (Option 2) is the right approach for the State of North Carolina, we recognize that this solution may still be considered overly aggressive in the current environment. As a result we are providing a third option that focuses on a more extended approach.
  - Addresses the immediate support staff risk for two of the legacy systems (Budget and Central Payroll) in the near term.
  - Defines requirements and initiates implementation of the enterprise data warehouse starting with Tax and Revenue. HR/Payroll, finance, budget, and the enterprise data modules are added to the warehouse in years 2 and 3.
  - Defines HR/Payroll requirements, selects outsourcing or package, and begins implementation in the near term. The implementation is completed by year 4.
  - Identifies and prioritizes enhancements for financials, budget, and tax and revenue in the near term and completes the implementation of the enhancements in years 3 through 5.
  - Reassess the budget system at the end of year 3, the financial system at the end of year 4, and the tax and revenue system at the end of year 5.

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Conclusion and Recommendations – Option 2 Phased Implementation

- Given the funding and resource constraints and the risks associated with a integrated ERP solution, we recommend a time-phased, incremental Phased Implementation approach that:
  - Allows the State to measure incremental successes and monitor program progress while making practical decisions for ongoing funding and commitment of State resources
  - Allows for a more manageable risk progression on the program and reduces dependence on a single software vendor
  - Provides flexibility to accommodate business, political, economical and technical changes in the future
  - Provides significant and long-lasting benefits without a commitment to full-funding - funding decisions can be made on an incremental basis leveraging previous investments
  - Places upfront emphasis on the most critical business needs, such as HR/Payroll and Budget, and highest value activities, such as increasing state collections, and most at risk applications, and
  - Balances the need for project phasing based on the risk, funding and State staffing constraints while maintaining project momentum

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Conclusion and Recommendations – Option 2 Phased Implementation

- The key recommendations under the Phased Implementation are:
  - Implement an Enterprise Data Warehouse solution
  - Outsource or Implement ERP package for the HR/Payroll systems and associated administrative processes
  - Implement a Budget Preparation System in the near term
  - Replace NCAS with an ERP-based financial system
  - Enhance the ITAS system to address immediate short-term needs and replace it in the long-term with either a customize package or ERP-based solution
  - Continue to make appropriate prudent low-cost, high benefit interim investments in enhancing existing systems to meet the ongoing business needs while planning for the replacement of these same systems

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Conclusion and Recommendations – Option 2 Phased Implementation

- The Enterprise Data Warehouse will address immediate information needs in the near term and provide an enterprise data store for the long term.
  - Improves the State's ability to retrieve management level information that crosses agency and program borders for better citizen services and more efficient operations
  - Provides a repository of tax and revenue data that can be used to increase tax and audit collections in the near term; other states have benefited from similar efforts
  - Extends value well beyond investment to other agencies and functions, e.g. human services, economic development and education
- The HR/Payroll functions require the State's immediate attention. Consideration of HR/Payroll outsourcing options should be evaluated as a potential alternative.
  - Requires minimal initial financial investment
  - Requires outsourcer to provide the required resources to perform outsourced functions
  - Outsourcing Human Resources or Payroll Is an accepted practice in the private sector and is an emerging trend in public sector
  - Transfers personnel costs to outsourcer for HR positions

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Conclusion and Recommendations – Option 2 Phased Approach

- We recommend the replacement of the Budget Systems with a stand-alone off-the-shelf system.
  - Budget Systems are implemented either before or more traditionally after the implementation of the financial system. In this case, given the risks associated with the Budget Preparation System, we recommend that the State replace it prior to the NCAS replacement.
  - The State could consider an ERP-based budget preparation system as long as it is consistent with the long-term ERP direction.
- We recommend the replacement of NCAS with an ERP-based financial system.
  - While NCAS is several years behind the technology curve and lacks some needed functionality, it does not need to be replaced immediately.
  - The State should begin NCAS replacement in a three-year timeframe.
- We recommend the enhancement of ITAS to address short-term needs and reassess the current system in a five-year timeframe
  - The replacement could be either a customized package or ERP-based solution depending what the two solutions offer at that point.

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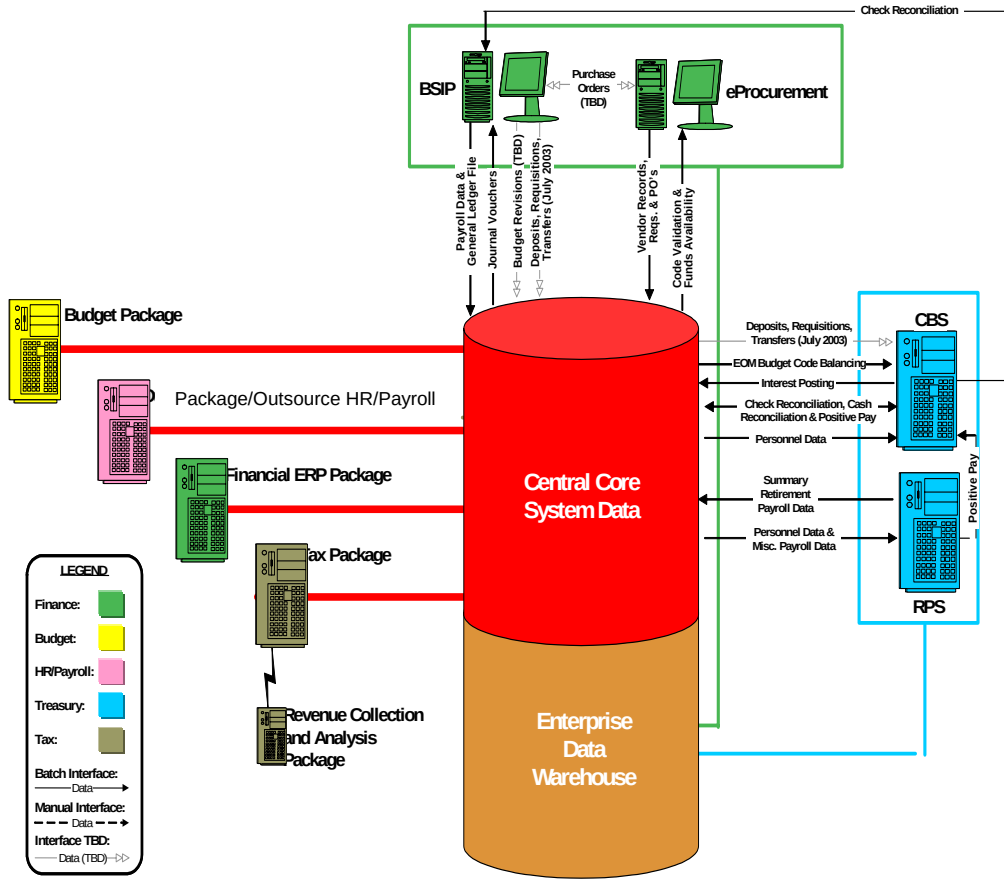
Conclusion and Recommendations – Option 2 Phased Approach

In summary, the Phased Implementation:

- Provides a Data Warehouse solution to meet immediate management reporting and revenue collection needs
- Allows the State to quickly address the immediate risk areas of HR/Payroll and Budget with a minimal initial investment
- Addresses the immediate tax and revenue issues in the near term and provides a long term solution for both Tax and Revenue and Financials through system replacement



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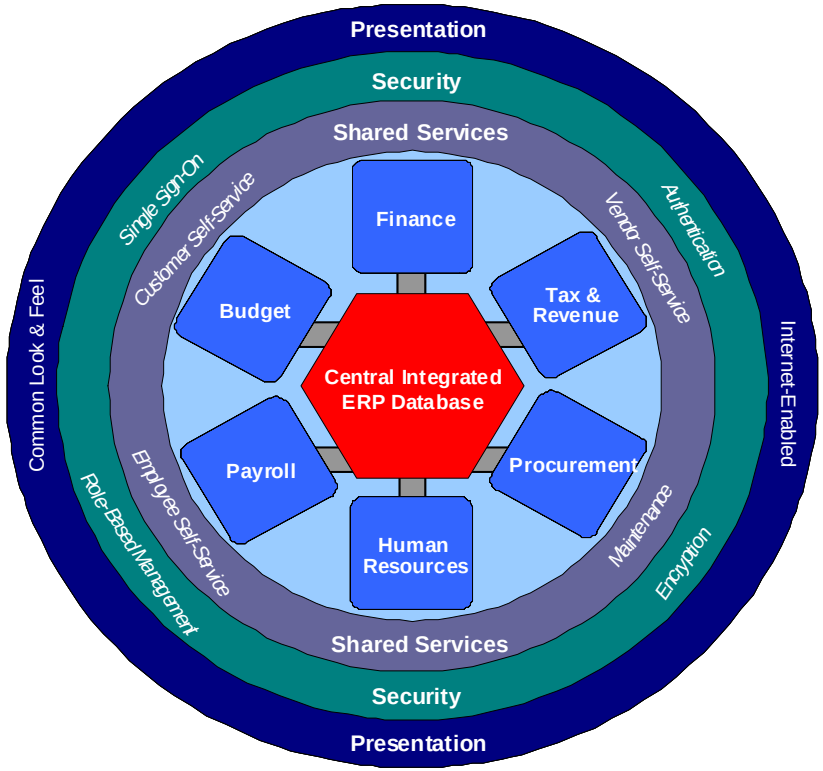
Conclusion and Recommendations – Option 3 Integrated ERP

- Ideally speaking, from an efficiency and effectiveness point of view, a single integrated Enterprise Resource Planning (ERP) system would be the long-term solution to replace the current core business system infrastructure.
- The single integrated ERP system would provide a completely integrated core business solution.
- However, implementation of single integrated ERP solution
  - Requires immediate and upfront commitment of significant funding and State resources.
  - Concentrates contractual, financial and operational risks of a complex implementation on a single vendor.
- Please refer to the Integrated ERP Advantages and Disadvantages subsection for more discussion

Best Practice Integrated Enterprise Solution



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Risks of Status Quo

- The State faces significant risks if it elects to maintain status quo. In summary:
  - The Payroll and Budget Preparation Systems are at increasing risk of failure given their age, technological platform and support resources required. This could cause business disruption, i.e., employees not getting paid on time, budget activities not supported
  - The State faces increasing costs and decreasing ability to maintain all of the core business systems due to lack of technical state resources and continued vendor support
  - Lack of integration between the systems is likely to cause reconciliation issues and limit the State's ability to get meaningful management information
  - The core business systems lack business and state-of-the art technical functionality.
    - ✓ This will cause increases in State operating costs due to additional cost and risk of enhancing aging systems, or additional employee resources to support business needs
    - ✓ Decrease the ability of the State to continue to provide employee, vendor and citizen service
  - Lack of business and technical functionality in the central core business systems is likely to cause proliferation of agency systems
  - The core business systems cannot be replaced instantaneously – the replacement will take several years and require significant financial and human resources from the State. This dictates that the State begin the replacement process immediately
  - Does not address public's demand for state-of-the-art technology and self service capabilities.

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Risks of Status Quo (Cont'd)

- General technology issues
  - In general all of the current core business systems are on 1980s technical platforms. These technical platforms are several years behind the current technology curve. As such several potential risks exist within all of the core business systems
    - ✓ Ability to attract and retain skilled technical resources to support the systems
    - ✓ Continued support of the software vendor
    - ✓ Lack of functionality that is standard in today's systems, resulting in inadequate employee and vendor support.
  - The current core business systems are not integrated with one another
    - ✓ Causes redundant data entry and reconciliation issues
    - ✓ Makes it difficult to provide meaningful management information
  - The current systems have limited self-service and work flow components.
  - There is also a cost associated with the continued enhancement and maintenance of these aging systems

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Risks of Status Quo (Cont'd)

- HR/Payroll systems
  - Generally if a payroll system pays the employees on time in the right amount, it is not wise to replace it. While the current DOT and Central Payroll systems meet this criteria, we believe these systems are most at risk for the following reasons:
    - ✓ DOT payroll is more than 30 years old and is written in assembler code. The Central payroll system is more than 20 years of age. It is difficult to attract and retain technical resources with the skills required to support these systems.
    - ✓ These systems are difficult to update with tax and legislatively mandated changes because of their design
    - ✓ Because they have been modified numerous times in the past, there is an increasing level of risk associated with continuing to modify them
    - ✓ Risk of catastrophic, high profile failure of these systems, which could result in a large number of employees not being paid on time
  - Because it will take several years to implement or outsource the replacement systems, we recommend that the replacement process begin immediately.

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Risks of Status Quo (Cont'd)

- HR/Payroll (cont'd)
  - The current PMIS system is based on dated technology and lacks certain required functionality including:
    - ✓ No statewide qualifications and competency catalog
    - ✓ No succession planning capability
    - ✓ Limited employee self-service (time keeping) used by only a few agencies
    - ✓ Many stand-alone agency based time and attendance systems
  - PMIS, Central Payroll, and DOT Payroll were custom designed – as a result all of these systems need to be replaced at the same time
    - ✓ Much of the HR functionality you would expect to find in PMIS is actually provided in the Central and DOT Payroll systems.
    - ✓ HR/Payroll systems available in the market today are designed to maintain all of the personnel information in the HR system. The payroll system accesses the data it needs from the HR system as it performs the payroll execution.
    - ✓ Replacing the Central and DOT payroll systems with a modern integrated HR/Payroll system requires that PMIS be replaced at the same time.

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Risks of Status Quo (Cont'd)

- Budget system
  - The current Budget system is actually three different systems.
    - ✓ The Budget systems are not integrated with each other or the other core business systems, such as financials.
    - ✓ The underlying technology is dated on all the three systems
    - ✓ The major risk associated with the current budget systems however, is that there is only one individual knowledgeable enough to support these system. If this individual leaves for whatever reason, the ability to develop and execute a State budget would be extremely difficult.

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Risks of Status Quo (Cont'd)

- Financial system
  - NCAS is technologically dated
    - ✓ While the NCAS Implementation was completed in 1995, the actual software was acquired in 1988
    - ✓ NCAS does not have the graphical user access and many of the self-service capabilities common in today's systems
    - ✓ NCAS was heavily customized as part of its original implementation. As such it requires additional time and effort to apply software vendor upgrades.
  - NCAS lacks critical business functionality
    - ✓ A grant accounting capability would serve to reduce the number of agency developed and supported financial systems
    - ✓ A more robust accounts receivable function that crosses agency boundaries would also help to reduce the number of agency systems and support statewide collection efforts
  - In a status quo environment
    - ✓ Employee and vendor service is likely to suffer
    - ✓ Proliferation of agency systems will continue resulting in increasing overall cost to the State
  - We recommend replacement of NCAS with an integrated ERP financial system package in the next three to five years.

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Risks of Status Quo (Cont'd)

- Tax and Revenue system
  - Although ITAS performs basic tax processing functions well, it's technology is dated
    - ✓ ITAS is several years behind in terms of technology
    - ✓ ITAS is mainframe green screen based and currently lacks the graphical user access and many of the self-service capabilities common in today's systems
    - ✓ ITAS is based on a customized package solution transferred from another state that was heavily customized as part of its original implementation. As such it is time consuming to upgrade the software.
    - ✓ Currently, DOR does not have a sophisticated audit or collections prioritization or scoring model to support risk scoring, compliance, audit and collections oriented functionality available in today's systems
  - Given status quo, DOR may fall technologically behind. Current North Carolina audit processes and selection tools are satisfactory by many standards; however, the state can benefit from implementing a modern data analytics tool and prioritization model.
  - We recommend that DOR continue with the current planned enhancements to improve audit, collections and customer service. DOR should assess replacement of ITAS in the next five years.

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Prerequisites For Success

- In order for the State to be successful in the replacement of its financial and human resources systems:
  - The State must ensure sufficient legislative and executive support throughout the implementation, including sufficient funding
  - The State must put in place a program governance structure to manage, direct and monitor the activities of the various project teams
  - The State must designate a fully-dedicated and empowered Program Manager, with an appropriate set of additional, committed and skilled functional and technical support resources, to perform contract and project management activities
  - Update the business processes to derive maximum value from the systems enhancement or replacement efforts
  - Large technology transformation efforts such as this will have a significant impact on the state organization and resources. The State must prepare and implement a change management and communication plan.
  - The State must review the state technology infrastructure to ensure its adequacy to meet the State's needs and support the system functionality

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Phased Implementation Advantages and Disadvantages

- Advantages
  - The Data Warehouse component of the Phased Implementation
    - ✓ Provides the ability to combine data from the legacy core business systems to support management reporting and decision making
    - ✓ Provides the capability to identify tax non fliers and the data necessary to improve collections resulting in a significant increase in revenue
    - ✓ Allows the State to cleanse legacy data and prepare for data conversion for the subsequent system implementations
  - The Budget package component of the Phased Implementation
    - ✓ Provides a single budget preparation system for initial budget preparation and budget revisions
    - ✓ Provides budget position control through integration with the HR system
    - ✓ Exchanges actual and budget data through integration with the financial system
    - ✓ Provides full budget preparation functionality and is based on current technology

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Phased Implementation Advantages and Disadvantages

- Advantages (Cont'd)
  - The HR/Payroll outsourcing component of the Phased Implementation
    - ✓ Allows the State to replace the HR/Payroll function with a minimal initial investment as compared to the ERP option
    - ✓ Places the responsibility for software maintenance and upgrades with the Service Provider
    - ✓ Places the responsibility for recruiting and retaining skilled technical resources to support the system with the Service Provider
  - HR Replacement Package
    - ✓ Requires significant upfront capital outlay for hardware, software and resources
    - ✓ Allows the State complete flexibility to determine the final ERP solution
    - ✓ Places responsibility for resources within the State's control

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Phased Implementation Advantages and Disadvantages

- Advantages (Cont'd)
  - The Financials ERP component of the Phased Implementation
    - ✓ Provides the State with an integrated financial system
    - ✓ Supports statewide accounts receivable processing and collections
    - ✓ Provides agencies with much needed grant accounting capability
    - ✓ Provides an integrated fixed asset application that is capable of supporting the GASB34 depreciation reporting requirements
    - ✓ Provides automated work flow and electronic approval capability to enhance document processing
    - ✓ Reduces the need for agency based financial systems
      - o Reduces redundant data entry
      - o Reduces the need for agency data reconciliation
      - o Provides a single point of financial information
    - ✓ Provides the ability to report on financial data across organizational and program boundaries

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Phased Implementation Advantages and Disadvantages

- Advantages (Cont'd)
  - The Tax and Revenue component of the Phased Implementation
    - ✓ Takes advantage of the investments made to date in the current tax and revenue systems
    - ✓ Provides enhanced collections and audit capability in the near term
    - ✓ Provides customer self-service through web-based enhancements
    - ✓ Provides for a long term technical refresh through system replacement

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Phased Implementation Advantages and Disadvantages

- Disadvantages
  - The Phased Implementation does not provide the seamless integration that can be achieved with a single integrated ERP solution
    - ✓ It will require internal data exchanges to facilitate integration between HR, Financials, and Tax and Revenue
    - ✓ The costs and management risks associated with the implementation and ongoing maintenance will be higher
  - Because of the phased nature of the approach a certain amount of rework will be required
    - ✓ During the financial system implementation it likely that changes will be made to the existing Chart of Accounts
    - ✓ Because the financial system is scheduled to be the third system implemented, changes resulting from the new Chart of Accounts will be required to the Data Warehouse, HR/Payroll, and Budget systems
    - ✓ The proposed implementation schedule is driven by the need with which the current systems need to be replaced rather than the implementation sequence that will minimize the need for rework

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Integrated ERP Advantages and Disadvantages

- Advantages
  - ERP provides a fully integrated statewide business infrastructure
    - ✓ Financials
    - ✓ HR/Payroll
    - ✓ Tax and Revenue
    - ✓ Budget
  - All applications have a standard look and feel
    - ✓ Users only need to learn one system navigation approach
    - ✓ Users are easier to cross train
  - The ERP system is built on a single technology
    - ✓ Its easier to deal with a single vendor and to maintain a single technology
    - ✓ Technical Resources are easier to train and more interchangeable
  - Single software vendor
    - ✓ Only one software support and maintenance agreement to deal with
    - ✓ A single upgrade path for all applications

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Integrated ERP Advantages and Disadvantages

- Advantages (Cont'd)
  - Usually an integrated ERP system has a lower ongoing maintenance cost than a Best of Breed Solution
  - Implementation cost and risk is also likely to be less for the ERP solution. The Phased Implementation requires the development of interfaces and data exchanges to accomplish integration
  - There is less rework than with a Phased Implementation
    - ✓ Assumes ERP implementation is started with financials
  - The large number of integrated ERP users allow the State to:
    - ✓ Negotiate larger software discounts with the software vendor
    - ✓ Have a larger say in the software vendors system enhancement and development priorities
  - The State should be able to leverage the ERP implementation experience on the North Carolina DOT BSI Project

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Integrated ERP Advantages and Disadvantages

- Disadvantages
  - Larger initial investment than Phased Implementation. Even if the ERP project is phased and starts with a small application like budget, the State must still license the entire ERP suite because budget needs general ledger for chart of accounts and HR for budget position control. The software vendors also bundle the applications for pricing strategies
  - Reliance on a single software vendor
    - ✓ If the vendor fails to perform in any way the State's entire business infrastructure is at risk
  - May not get the best functional fit in all business areas. Giving up functionality in some areas in favor of integration

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Extended Implementation Advantages and Disadvantages

- Advantages
  - Recognizes the funding and environmental constraints that exist within the State government at the present time
  - Because the primary near term focus is on defining requirements, the initial investment is minimal
  - The organizational impact is also minimal
- Disadvantages
  - The likelihood of a legacy system failure is greater because of the elongated project timeline
  - Projects that are scheduled to last more than five years often fail because it is extremely difficult to maintain momentum over such a long period of time
  - The lengthy project time line also causes realization of expected benefits to be delayed
  - Requirements identified in the near term may be out of date before the system implementation starts
  - Interfaces and data exchanges are required to integrate the various legacy and replacement systems
  - The variety of legacy and replacement systems could require the use of multiple open technical platforms
  - The State would be required to provide resources with a variety of technical skills to support the various systems.

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